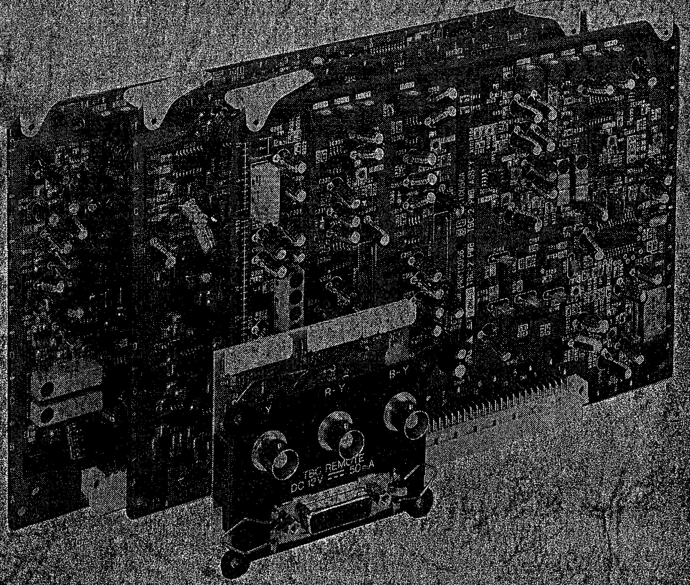
JVC

SERVICE MANUAL

TIME BASE CORRECTOR BOARDS

SA-T22E



SPECIFICATIONS

COMPORNENTS

- TBC-1 Printed wire board x 1
- TBC-2 Printed wire board x 1
- TBC-3 Printed wire board x 1
- Remote Control board x 1

VIDEO (TBC only)

Signal process	Component (Y/R Y/B-Y = 4 : 2 : 2)
Sampling rate	8 bit
Sampling frequency	Y: 14.2 MHz (908 fH) C: 7.1 MHz (454 fH)
Correction range	1 field
S/N ratio	56 dB PP/RMS
Jitter	Y: ±15μsec C: ±2° Y/R-Y/B-Y: ±15 nsec
Frequency responce	Y: 3 MHz, ±0.5 dB, 6 MHz: +0/–3 dB C: 4.43 MHz ±1.5 MHz +0/–3 dB Y/R-Y/B-Y: 2.0 MHz +0/–3 dB
Output	Y: 1.0 Vp-p, 75 ohms, unballanced R-Y/B-Y: 0.7 Vp-p, 75 ohms, unballanced (LOW) (100,0,100,0)/0.7 Vp-p, 75 ohms, unballanced (HIGH)(100,0,75,0) selectable by menu.
Power consumption	20 watts

Remote connector

No	Signal	No	Signal	No	Signal
1	FG	6	CHROMA PHASE	11	FREEZE EN
2	+12V	7	SET UP LEVEL	12	—
3	GND	8	—	13	—
4	VIDEO LEVEL	9	—	14	OPERATE
5	CHROMA LEVEL	10	REMOTE EN	15	GENLOCK

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

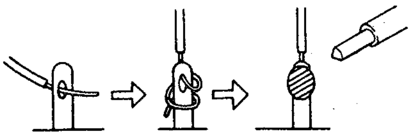


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it.

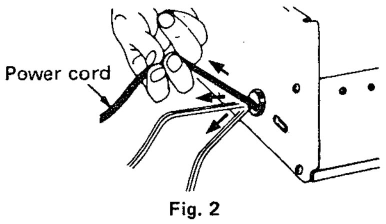


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number** : E03830-001
    2) **Required tool** : Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

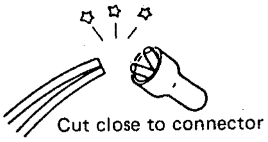


Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

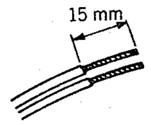


Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

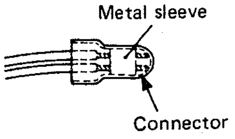


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

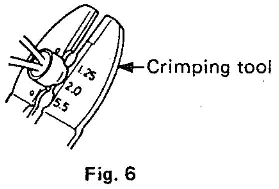


Fig. 6

(5) Check the four points noted in Fig. 7.

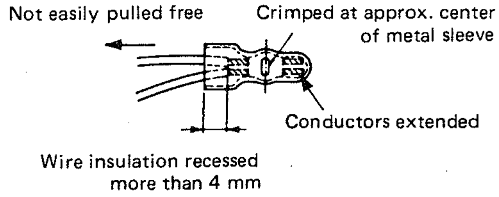

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

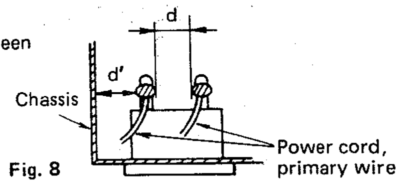


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

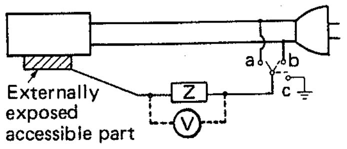


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

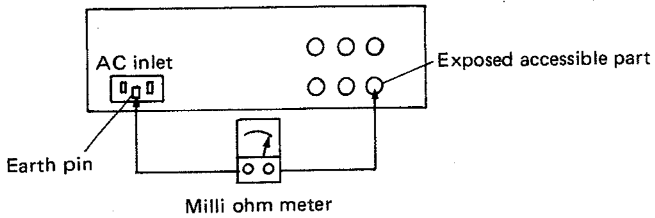


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R≧1 MΩ/500 V DC	AC 1 kV 1 minute	d, d'≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d'≧ 4 mm
110 to 130 V	USA & Canada	—	AC 900 V 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R≧10 MΩ /500 V DC	AC 3 kV 1 minute (Class II) AC 1.5 kV 1 minute (Class I)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

To install and to remove the SA-T22E, consult your JVC dealer.

Time Base Corrector Boards
SA-T22E

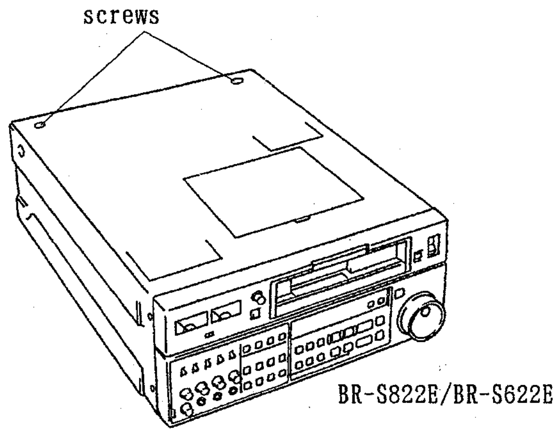
The SA-T22E Time Base Corrector Boards is designed specifically for installation in JVC BR-S822E/BR-S622E Professional-S VTR's.

FEATURES

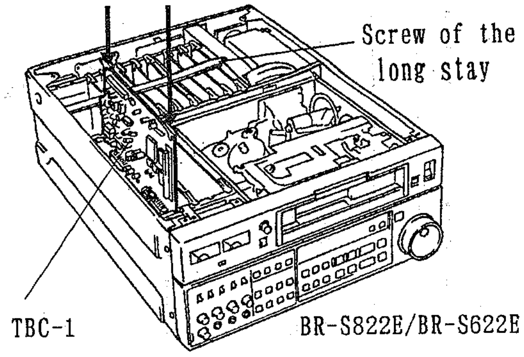
- High picture quality thanks to component signal(Y/R-Y/B-Y) processing with sampling rete of 4:2:2 and an 8-bit quantization for each Y and C signal.
- Component signal(Y/R-Y/B-Y) output of M Ⅱ or Bcam level selectable.
- Remote control capability.(Maximum cable length is 5 m)
- Built-in field memory allowing a wide range of compensation.

INSTALLATION OF SA-T22E

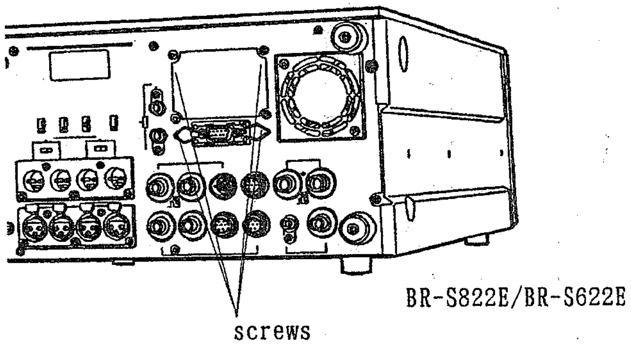
1. Set the power switch of the BR-S822E/BR-S622E to OFF.
   Please do not touch a control of the SA-T22E.
   Remove two screws from the top panel of the VTR to remove the top panel.



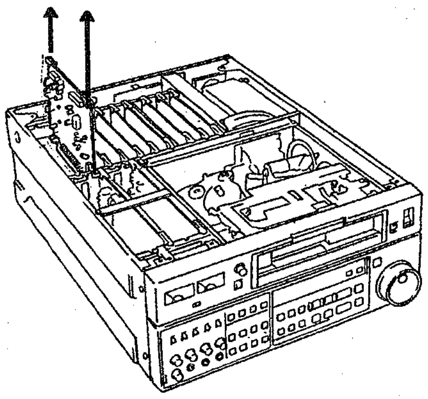
2. Remove screw from the short stay to dettach the short stay and insert the TBC-1 printed wire board firmly as a illustration. Push the left and right levers on the upper side of the TBC-1. Then secure the short stay with the screw.



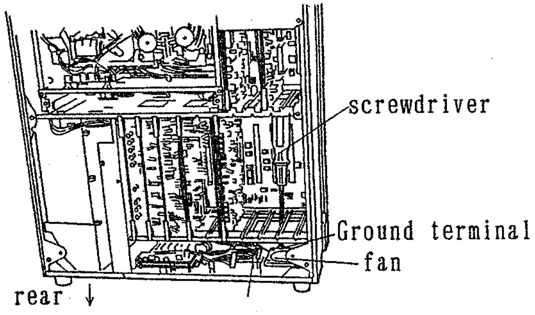
3. Remove the four screws from the blank panel and remove the blank panel.



4. Loosen screws from the long stay to dettach the long stay and remove the OUTPUT PWB and Y COMB PWB to make a room for screwdriver to work. Locate a braos screw underneath the fan.
Loosen it off out of the REAR-1 BOARD, put it back on together with the ground terminal of the CONNECTOR BOARD.

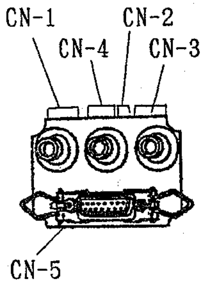


BR-S822E/BR-S622E


screwdriver
Ground terminal
fan
rear ↓
REAR-1 PWB

Top view of the
BR-S822E/BR-S622E

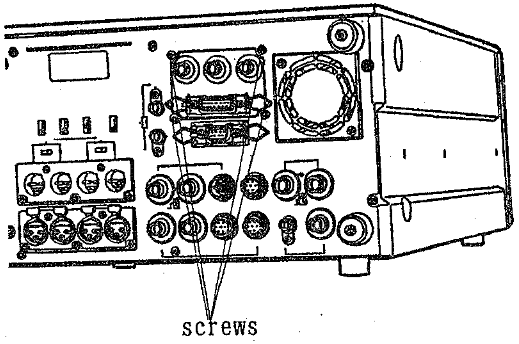
5. Attach the connectors to the CONNECTOR BOARD, Set the board so that the remote terminal's pin side faces the inside the unit.
Make connections from connections from CN-5 first, then CN-1 to CN-4 in order.


CN-1
CN-2
CN-4
CN-3
CN-5

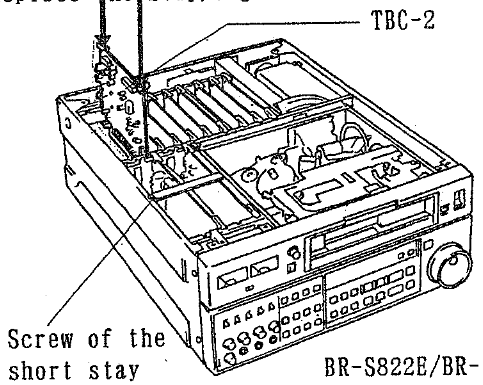
Cable No.	(Pins)	Connector
4R-1	(10)	CN-1
4R-2	(2)	CN-2
4R-3	(6)	CN-3
4R-4	(8)	CN-4
4R-5	(4)	CN-5

6. Insert OUTPUT PWB and Y COMB PWB back into the slot.

7. Attach the SA-T22E's CONNECTOR BOARD to the rear panel with four screws.

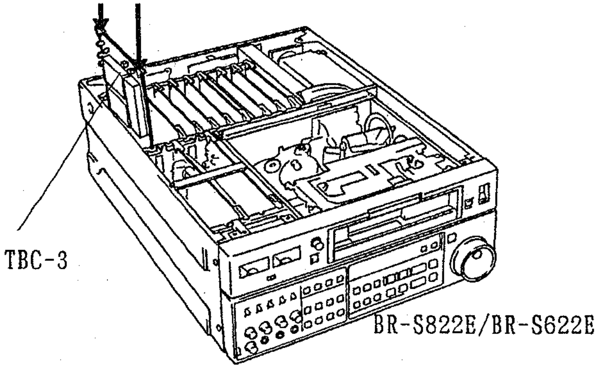


8. Insert the TBC-2 printed wire board firmly as a illustration.
Push the left and right levers on the upper side of the TBC-2.
Replace the stay, tighten the screw.

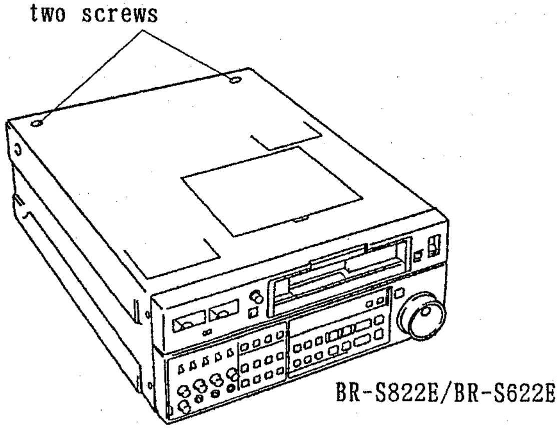

TBC-2
Screw of the
short stay

BR-S822E/BR-S622E

9. Insert the TBC-3 printed wire board firmly as a illustration. Push the left and right levers on the upper side of the TBC-3. Then secure the long stay with the screw.



10. Attach the holders with designated screws and replace the top panels with the two screws.



OPERATION

- Refer the BR-S822E/BR-S622E instructions.

SPECIFICATIONS

- COMPONENTS
  - ·TBC-1 Printed wire board x 1
  - ·TBC-2 Printed wire board x 1
  - ·TBC-3 Printed wire board x 1
  - ·Connector Board x 1
  - ·Supply screws x 4
- VIDEO (TBC only)
  - ·Signal process : Component (Y/R-Y/B-Y=4:2:2)
  - ·Sampling rate : 8 bit
  - ·Sampling frequency:Y: 14.2 MHz
    C: 7.1 MHz
  - ·Correction range : 1 field
  - ·S/N ratio : 56 dB RMS
  - ·Jitter :Y: ±15 μsec, C: ± 2°
    Y/R-Y/B-Y: ±15n sec
  - ·Frequency responce:Y: 3 MHz ±0.5 dB, 6MHz:+0/-3dB
    C: 4.43 MHz±1.5MHz +0/-3dB
    Y/R-Y/B-Y: 2.0MHz +0/-3dB
  - ·Output Y: 1.0V $_{P-P}$,75 ohms, unballanced
    R-Y/B-Y:0.7 V $_{P-P}$,75 ohms, unballanced(M II/LOW)
    (100, 0, 100, 0)/0.7V $_{P-P}$,75 ohms,
    unballanced (Bcam/HIGH)(100, 0, 75, 0)
    selectable by menu.
  - ·Power consumption : 20 watts
  - ·Remote connector

No	Signal	No	Signal	No	Signal
1	FG	6	CHROMA PHASE	11	FREEZE EN
2	+12V	7	SET UP LEVEL	12	—
3	GND	8	—	13	—
4	VIDEO LEVEL	9	—	14	OPERATE
5	CHROMA LEVEL	10	REMOTE EN	15	GENLOCK

SECTION 1
GENERAL DESCRIPTION

1.1 INTRODUCTION

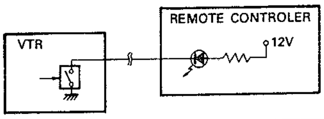
SA-T22E is a T.B.C. board (Time Base Corrector Board) for exclusive use of the video cassette recorder BR-S822E/BR-S622E.
For connection with VTR's board, refer to the service manual No. 9261 for the BR-S822E/BR-S622E.

1.2 SETUP

1) Install the T.B.C. board according to instructions.
2) Set the T.B.C. switch on the front sub panel to ON.
3) Turn on the power switch and check respective levels related to the T.B.C. as indicated.
4) If necessary, proceed to adjust the following items.
   a. Y OUTPUT LEVEL (2.3.7)
   b. COMPONENT COLOR LEVEL (2.1.9)
   c. CARRIER BALANCE LEVEL ADJ. (2.3.11)
   d. ENCODER BURST LEVEL ADJ. (2.3.12)
   e. ENCODER COLOR LEVEL & PHASE ADJ. (2.3.13)
   f. T.B.C. MODE COMPONENT Y LEVEL ADJ. (2.1.10)
   g. T.B.C. MODE Y/R-Y DELAY ADJ. (2.1.11)
   h. T.B.C. MODE Y/B-Y DELAY ADJ. (2.1.12)
   i. T.B.C. MODE COMPONENT COLOR LEVEL ADJ. (2.1.13)

   * See Section 2

1.3 REMOTE CONNECTOR

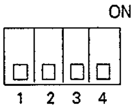
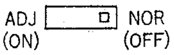
	Pin No.	Signal	Note
POWER, GND	1	Frame Grand	Shield Wire
〃	2	+12 V	MAX. 50mA
〃	3	GND	
DC ADJUST	4	VIDEO LEVEL	6 ±4 V Impedance 5K Ω~50K Ω
〃	5	CHROMA LEVEL	↑
〃	6	CHROMA PHASE	↑
〃	7	SET UP LEVEL	↑
〃	8	RSVD DC 1	Not Used
〃	9	RSVD DC 2	Not Used
CONTROL	10	REMOTE EN	LOW or OPEN(5V) LOW ACTIVE
〃	11	FREEZE EN	↑
〃	12	RSVD CTL 1	Not Used
〃	13	RSVD CTL 2	Not Used
LED	14	OPERATE	
〃	15	GEN LOCK	

1.4 CONNECTOR & CABLE

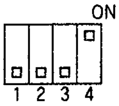
- D-SUB CONNECTOR 15 Pin FEMALE (VTR & REMOTE CONTROL)
- CABLE D-SUB 15 Pin MALE (CABLE LENGTH MAX. 5 m)

1.5 INTERNAL SWITCHES

60 TBC-1

Symbol No.	Switch Name	Setting at Shipment	Function
SW1 (7 I)	Adjusting switch (Y/C TIMING)	—	Refer to Item No. 15 "Y/C timing adjustment" in Sect. 3.5.3.
SW2-1 (6 I)	NTSC V. BLANKING PERIOD SELECT switch	SW2 	Invalid with SW2-2 set to OFF.
SW2-2	NTSC/PAL		ON : NTSC (Make sure to set to OFF.) OFF : PAL
SW2-3	Not used		—
SW2-4	Not used		—
SW3 (5 I)	Adjusting switch (FORCED TBC)	SW3 	ADJ (ON) : TBC is activated regardless of setting of TBC switch on the front sub-panel (on the back of operation panel. NOR (OFF): TBC functions according to TBC switch setting.

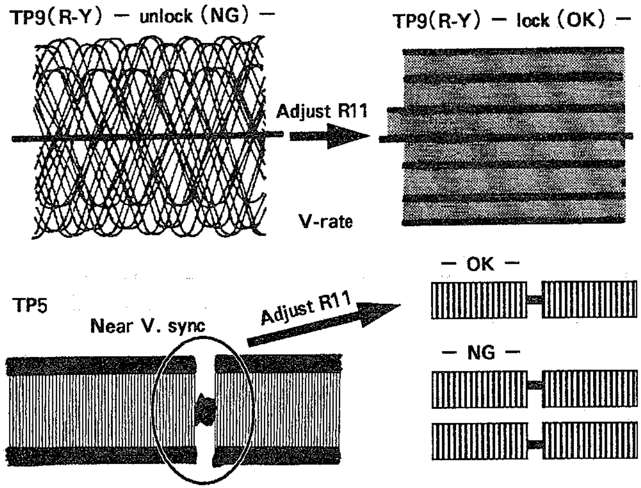
62 TBC-3

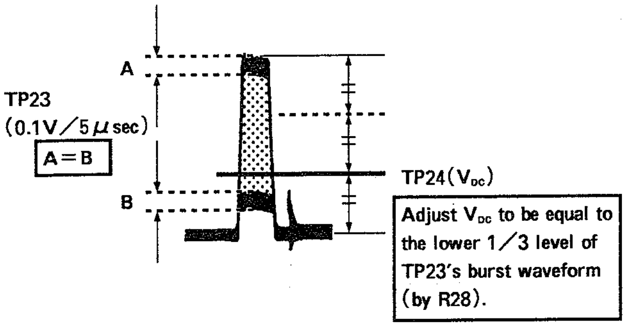
Symbol No.	Switch Name	Setting at Shipment	Function
SW1-1 (3 H)	Adjusting switch	SW1 	ON : For decoder adjustment mode OFF : For normal operation Usually set to OFF position.
SW1-2	SYNC DETECT MODE switch		ON : For period detection mode OFF : For width detection mode and period detection mode
SW1-3	W. CLOCK SELECT (1)		ON : For AFC mode OFF : For APC selection mode to affect SW1-4
SW1-4	W. CLOCK SELECT (2)		With SW1-3 set to OFF: ON : For APC mode OFF : For AFC-APC automatic selection mode

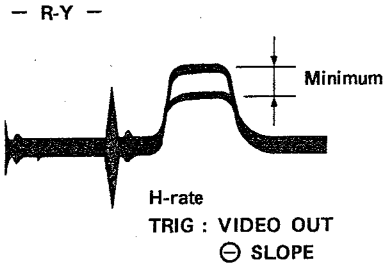
SECTION 2
ELECTRICAL ADJUSTMENT

2. 1 TBC-2 CIRCUIT

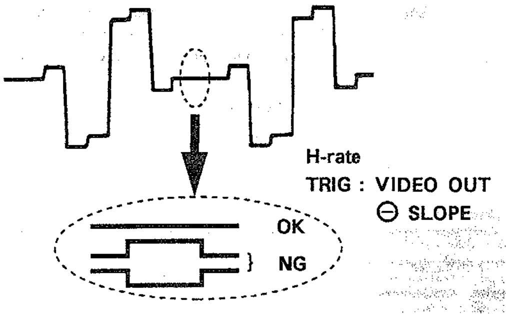
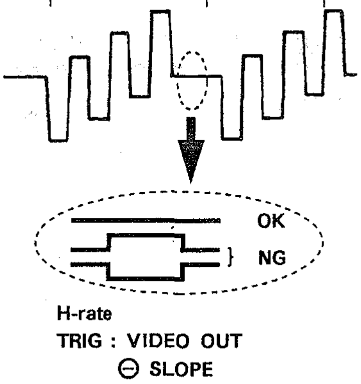
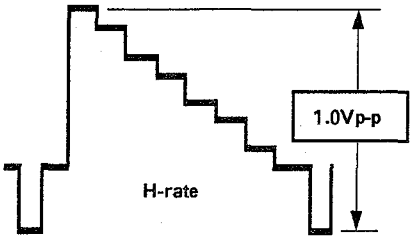
Note: ***• For adjustment in this section, check points and adjustment parts are located on the TBC-2 board unless otherwise specified.***
• Do not disturb the volume R6 since it is not an object of this adjustment. (R6 is set to the full clockwise position.)

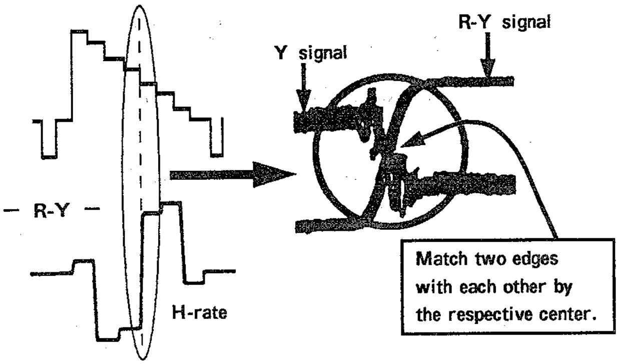
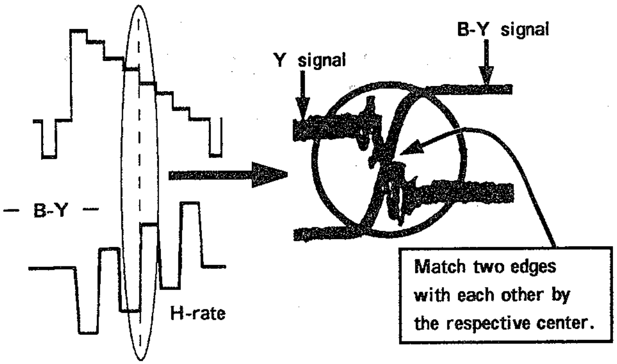
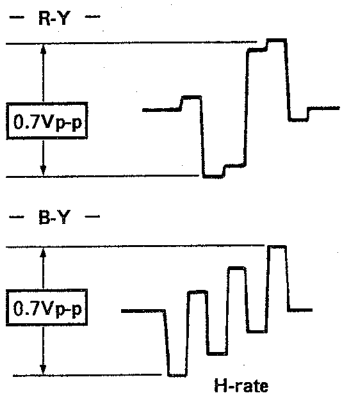
<table>
<tr><th>No.</th><th>Item</th><th>Check point</th><th>Adjustment</th><th>Signal</th><th>Mode</th><th>Check and Adjustment</th></tr>
<tr><td>1</td><td>**Decorder APC**</td><td>TP9: 1G
TP5: 2B
TP1: 3E

TP9(R-Y) — unlock (NG) —
TP9(R-Y) — lock (OK) —
Adjust R11
V-rate
— OK —
TP5
Near V. sync
Adjust R11
— NG —

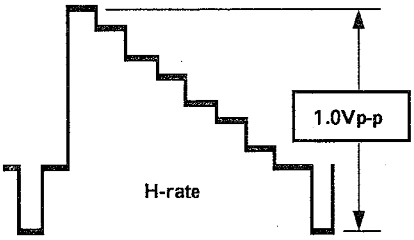
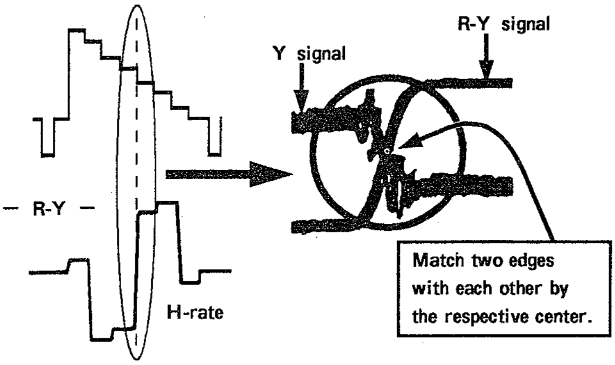
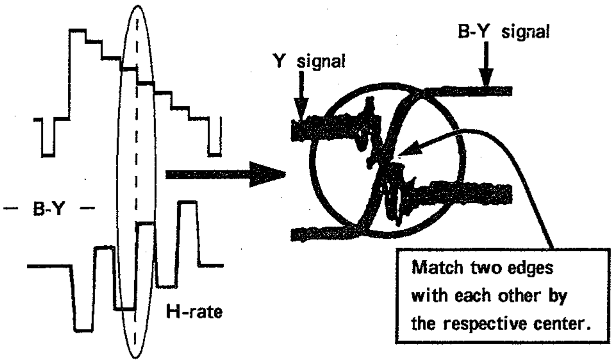
</td><td>R11: 2B</td><td>Color bar</td><td>E-E</td><td>1) Set SW1 on the TBC-2 board to "ADJ" position.
2) Observe waveform at TP9 with an oscilloscope at the V-rate.
3) Confirm that the waveform observed at TP9 is locked. If not, adjust R11 to lock the waveform (see the figure).
4) Connect the oscilloscope with TP1 and TP5.
5) Comparing waveform at TP5 with that at TP1, adjust R11 so that the TP5's waveform has the center of error voltage nearly in the section corresponding to the V. sync of the TP1's waveform.
Note After the adjustment, confirm that waveform observed at TP9 is locked.
6) Return SW1 to "NORM" position.</td></tr>
<tr><td>2</td><td>**Color killer**</td><td>TP23: 7H
TP24: 7H

A
TP23
(0.1V/5μsec)
A=B
B
TP24(V_{DC})
Adjust V_{DC} to be equal to the lower 1/3 level of TP23's burst waveform (by R28).

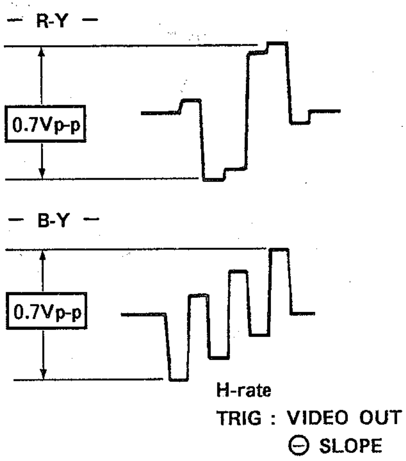
</td><td>R27: 7E
R28: 7H</td><td>Color bar</td><td>E-E</td><td>1) Set SW1 on the TBC-2 board to "ADJ" position.
2) Adjust R7 so that the waveform observed at TP23 has the same level in the portions "A" and "B" shown in the figure.
3) Adjust DC voltage measured at TP24 by R28 so that the DC voltage is equal to the lower 1/3 of the full level of TP23's waveform.
Reference
For the above adjustment, measure 1/3 value of DC voltage of TP23's burst waveform first, then adjust DC voltage measured at TP24 to have the same value as the 1/3 of TP23's DC voltage. (For this adjustment, make sure to measure voltages at TP23 and TP24 with the same GND and voltage range.)
4) Return SW1 to "NORM" position.</td></tr>
<tr><td>3</td><td>**HUE**</td><td>TP9: 1G

— R-Y —
Minimum
H-rate
TRIG : VIDEO OUT
⊖ SLOPE

</td><td>R7: 1F</td><td>Color bar</td><td>E-E</td><td>1) Adjust R7 so that waveforms of R-Y signals do not double each other in the burst portion.</td></tr>
</table>

No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
4	**DC level difference in R-Y blanking**	CN1pin13A (EXT. board)  	R8: 2I	Color bar	E-E	1) Adjust R8 to remove level difference (DC) in the burst blanking portion of the R-Y signal.
5	**DC level difference in B-Y blanking**	CN1pin12A (EXT. board)  	R9: 3I	Color bar	E-E	1) Adjust R9 to remove level difference (DC) in the burst blanking portion of the B-Y signal.
6	**COMPONENT Y level**	COMPONENT ·Y OUT (75Ω terminator)  	R21: 10I	Color bar	E-E	***Note Confirm that the VIDEO OUT level is 1.0Vp-p .*** 1) If VIDEO OUT level is not 1.0Vp-p, adjust VIDEO LEVEL VR inside the front panel. (Set the AGC switch to "OFF") 2) Set the MEMORY switch No.104 (COMPONENT OUT LEVEL) to "HIGH" position. 3) Adjust R21 to obtain 1.0Vp-p as Y output level at the COMPONENT OUT terminal. 4) Return the MEMORY switch No.104 to "LOW" position.

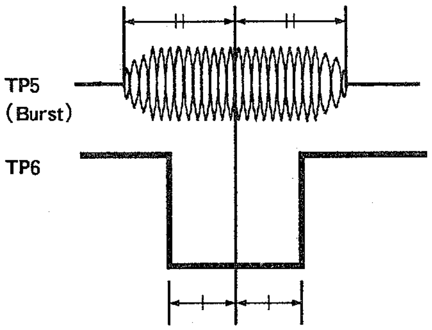
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
7	**Y/R-Y delay**	COMPONENT •Y OUT •R-Y OUT (75Ω terminator)  Match two edges with each other by the respective center.	R2: 5F	Color bar	E-E	1) Set the MEMORY switch No.104 (COMPONENT OUT LEVEL) to "HIGH" position. 2) Adjust R2 so that phases of Y output waveform and R-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. 3) Return the MEMORY switch No.104 to "LOW" position.
8	**Y/B-Y delay**	COMPONENT •Y OUT •B-Y OUT (75Ω terminator)  Match two edges with each other by the respective center.	R4: 5F	Color bar	E-E	1) Set the MEMORY switch No.104 (COMPONENT OUT LEVEL) to "HIGH" position. 2) Adjust R4 so that phases of Y output waveform and observed at the COMPONENT OUT terminal match with each other in the portion shown in the figuer. 3) Return the MEMORY switch No.104 to "LOW" position.
9	**COMPONENT color level**	COMPONENT •R-Y OUT •B-Y OUT (75Ω terminator)  TRIG : VIDEO OUT ⊖ SLOPE	R3: 4I(R-Y) R5: 4I(B-Y)	Color bar	E-E	1) Input the color bar signal directly to the vector scope (75Ω terminated) and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Confirm that luminescent points of color bars are positioned in ⊞ mark respectively. 3) If any luminescent point is out of the ⊞ mark, adjust the VIDEO LEVEL VR on the VTR's front panel to position it in the mark. 4) Set the MEMORY switch No.104 (COMPONENT OUT LEVEL) to "HIGH" position. 5) Adjust R3 so that R-Y output level at the COMPONENT OUT terminal is 0.7Vp-p. 6) In the same manner, adjust R5 to obtain 0.7Vp-p as B-Y output level. 7) Return the MEMORY switch No.104 to "LOW" position.

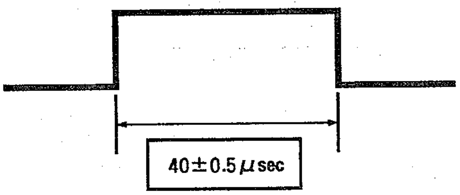
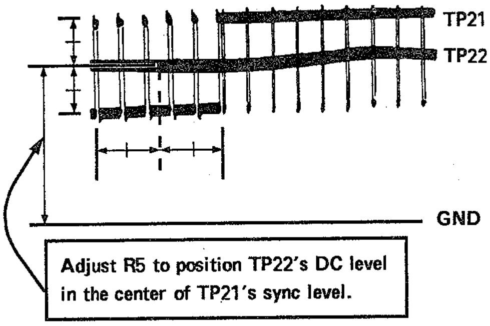
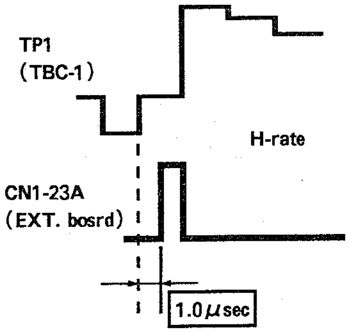
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
	Note : *• For adjustment of items No,10 and after , confirm that the TBC-1 board has been adjusted correctly.* *• Before proceeding to the following, turn on SW2-3 on the TBC-1 board to set for the TBC mode.*					
10	**TBC mode COMPONENT Y level**	COMPONENT •Y OUT (75Ω terminator) 	R26: 10I	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Set the MEMORY switch No.104 (COMPONENT OUT LEVEL) to "HIGH" position. 3) Adjust R26 so that Y level at the COMPONENT OUT terminal is 1.0Vp-p . 4) Return the MEMORY switch No.104 to "LOW" position. 5) Return SW3 to "NORM" position.
11	**TBC mode Y/R-Y delay**	COMPONENT •Y OUT •R-Y OUT (75Ω terminator)  Match two edges with each other by the respective center.	R22: 10G	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R22 so that phases of Y output waveform and R-Y output waveform observed at the COMPONENT OUT terminal match with each other in the portion shown in the figure. ***Note** After this adjustment, make sure to adjust Y/C timing of the TBC-1 board.* 3) Return SW3 to "NORM" position.
12	**TBC mode Y/B-Y delay**	COMPONENT •Y OUT •B-Y OUT (75Ω terminator)  Match two edges with each other by the respective center.	R24: 8G	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ" . 2) Adjust R24 so that phases of Y output waveform and B-Y output waveform observed the COMPONENT OUT terminal match with each other in the portion shown in the figure. ***Note** After this adjustment, make sure to adjust Y/C timing of the TBC-1 board.* 3) Return SW3 to "NORM" position.

No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
13	**TBC mode COMPONENT color level**	COMPONENT •B-Y OUT •R-Y OUT (75Ω terminator)  − R-Y − 0.7Vp-p − B-Y − 0.7Vp-p H-rate TRIG : VIDEO OUT ⊖ SLOPE	R23:9I(R-Y) R25:8I(B-Y)	Color bar	E-E	1) INPUT the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Set the SW3 of TBC-1 board to "NORM" . 3) Confirm that luminescent point of color bars are positioned in ⊞ mark respectively. 4) If any luminescent point is out of the ⊞ mark, turn off the AGC switch on the VTR's front panel and adjust the VIDEO LEVEL VR (on the VTR's front panel) to position it in the mark. 5) Set the SW3 to "ADJ". 6) Set the MEMORY switch No. 104 (COMPONENT OUT LEVEL) to "HIGH" position. 7) Adjust R23 so that R-Y output level at the COMPONENT OUT terminal is 0.7Vp-p. 8) Adjust R25 so that B-Y output level at the COMPONENT OUT terminal is 0.7Vp-p. 9) Return the MEMORY switch No.104 to "LOW" position.

2. 2 TBC-3 CIRCUIT

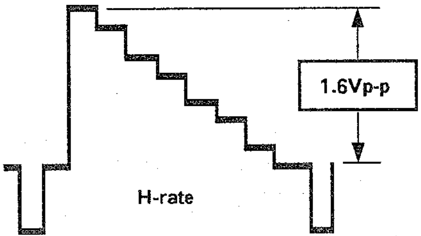
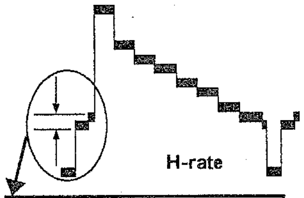
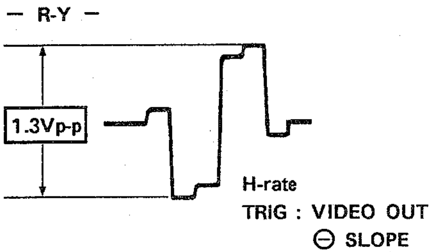
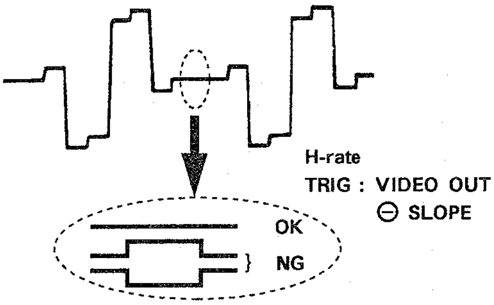
Note: • *Unless otherwise indicated, all check points and adjustment parts are located on the TBC-3 board.*
• *For check and adjustment of this circuit, supply a signal synchronized with the signal which will be input to theVIDEO IN terminal to the EXT. REF IN terminal of the VIDEO LINE IN connector with 75Ω terminator.*
• *Do not disturb the volume R12 since it is not an object of this adjustment. (R12 is set to the center position.)*

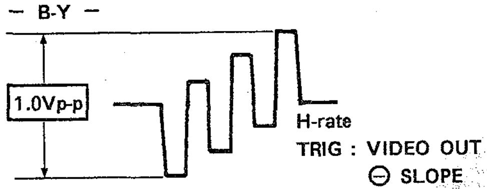
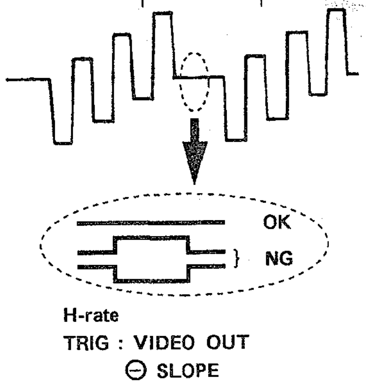
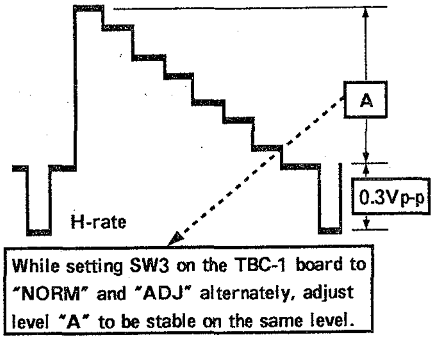
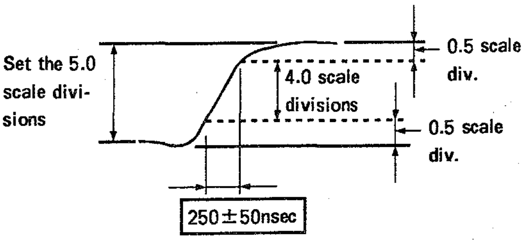
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
1	**Decoder APC frequency**	TP50: 3H ↓ Frequency counter TP 50 : 4.433619MHz ±5Hz	R1: 1H	Color bar ↓ EXT.REF. (75Ω terminator)	E-E	1) Set SW1-1 on the TBC-3 board to "ON". 2) Adjust R1 so that frequency at TP50 becomes 4.433619MHz. 3) Return SW1-1 to "OFF".
2	**Burst flag mask pulse position**	TP5: 1E TP6: 1G 	R2: 2H	Color bar ↓ EXT.REF. (75Ω terminator)	E-E	1) With an oscilloscope, observe waveforms of pulse at TP6 and burst at TP5. 2) Adjust R2 to coincide respective centers of the burst and the pulse with each other in the waveforms.
3	**Color killer**	TP9: 2E ↓ Digital Voltmeter	–	Color bar ↓ EXT.REF. (75Ω terminator)	E-E	1) Measure DC voltage at TP9 (regard the measured voltage as "A").
				5step (nonburst) ↓ EXT.REF. (75Ω terminator)	E-E	1) With input of 5steps signal, measure DC voltage at TP9 (regard the measured voltageas "B").
		TP8: 2E ↓ Digital Voltmeter $(B+A)/2 = V_{DC}$ at TP8 A: V_{DC} at TP9 with input of color bar signal. B: V_{DC} at TP9 with input of 5step signal.	R4: 1E	Color bar ↓ EXT.REF. (75Ω terminator)	E-E	1) Adjust R4 so that DC voltage measured at TP8 is centered between "A" and "B".

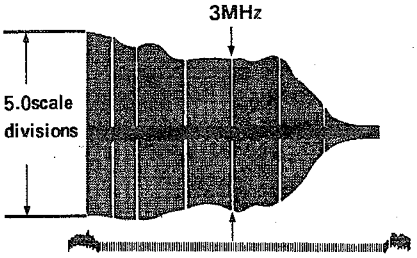
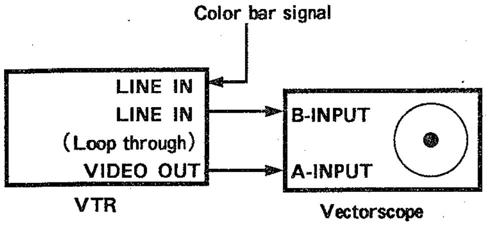
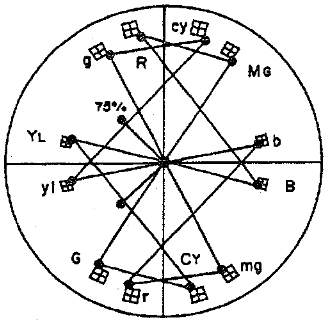
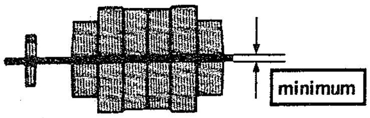
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
4	**Half H killer pulse width**	TP26: 7H	R7: 7I	Color bar	E-E	1) Adjust R7 so that pulse width measured at TP26 is 40 μsec in duration. 
5	**2nd sync separation level**	TP21: 10G TP22: 10F	R5: 10G	Color bar	E-E	1) Connect oscilloscope's CH1 and CH2 with TP21 and TP22 respectively. *Note Set the oscilloscope's measuring range and GND level to be the same for CH1 and CH2.* 2) Adjust R5 to position TP22's DC level in the center of TP21's sync level. *Note Make sure that the oscilloscope is set to DC range for both CH1 and CH2.*  TP21 TP22 GND Adjust R5 to position TP22's DC level in the center of TP21's sync level. V-rate TRIG : D-FF ⊖ SLOPE
6	**Clamp pulse position**	TP1: 10E (TBC-1) CN1pin 23A (EXT. board: TBC-3)	R8: 4H (TBC-3)	Color bar	E-E	1) Connect the oscilloscope's probes to pin 23A of CN1 and TP1 on the TBC 1 board while trigger it with signal from TP1 on the TBC-1 board. 2) Adjust R8 so that the rise of the pulse from pin23A of CN1 is 1.0 μsec after the sync of TP1's pulse.  TP1 (TBC-1) H-rate CN1-23A (EXT. bosrd) 1.0μsec
7	**VCO voltage**	TP48: 6C	L1: 6B	Color bar	E-E	1) Adjust L1 so that voltage at TP48 is $0V_{DC}$. TP48: $0V_{DC}$

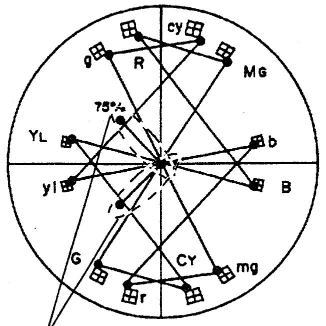
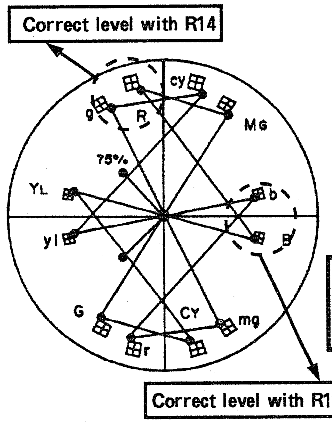
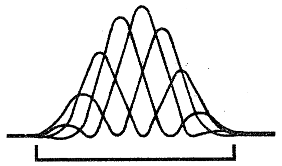
2. 3 TBC-1 CIRCUIT

Note:
- *Unless otherwise indicated, all check points and adjustment parts are located on the TBC-1 board.*
- *For check and adjustment of this circuit, supply a signal synchronized with the signal which will be input to the VIDEO IN terminal to the EXT. REF IN terminal of the VIDEO LINE IN connector with 75Ω terminator.*
- *Adjust this circuit with MEMORY switch No.104 (COMPONENT OUT LEVEL) set "HIGH". After adjustment, make sure to turn it "LOW".*

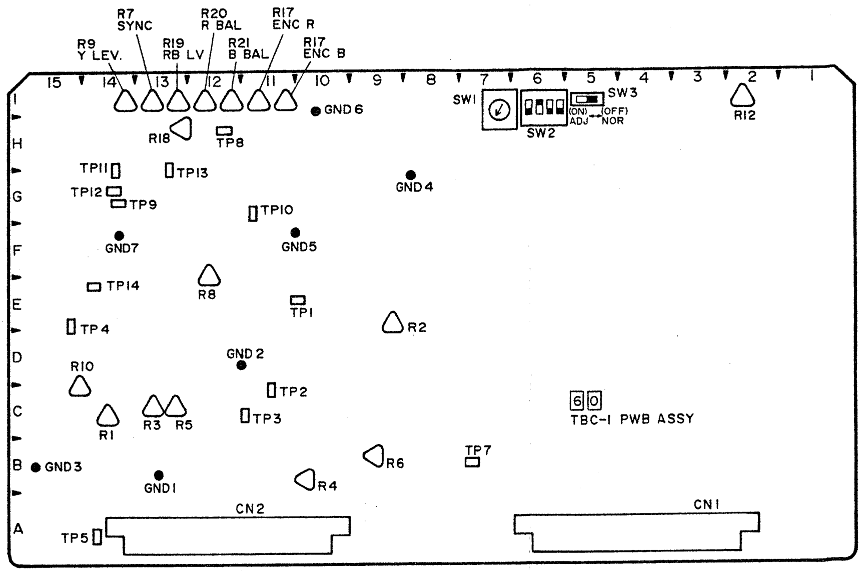
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
1	**A/D Y level**	TP1: 10E 	R1: 14C	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R1 so that level difference between TP1's pedestal level and 100% white level (except sync of Y level) is 1.6Vp-p. 3) Return SW3 to "NORM" position.
2	**A/D Y clamp level**	CN2pin20A (EXT. board) or COMPONENT ·Y OUT (75Ω terminator)	R2: 9E  Flatten waveform in this section by R2.	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Observing waveform at pin 20A of CN2, adjust R2 to flatten the waveform in the section shown in the figure. 3) Return SW3 to "NORM" position.
3	**A/D R-Y level**	TP2: 11C 	R3: 13C	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R3 so that output (R-Y level) at TP2 is 1.3Vp-p. 3) Return SW3 to "NORM" position.
4	**A/D R-Y clamp level**	CN2pin21A (EXT. board) or COMPONENT ·R-Y OUT (75Ω terminator) 	R4: 10B	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R4 to remove DC level difference in the blanking portion of CN2pin 21A (COMPONENT R-Y OUT). 3) Return SW3 to "NORM" position.

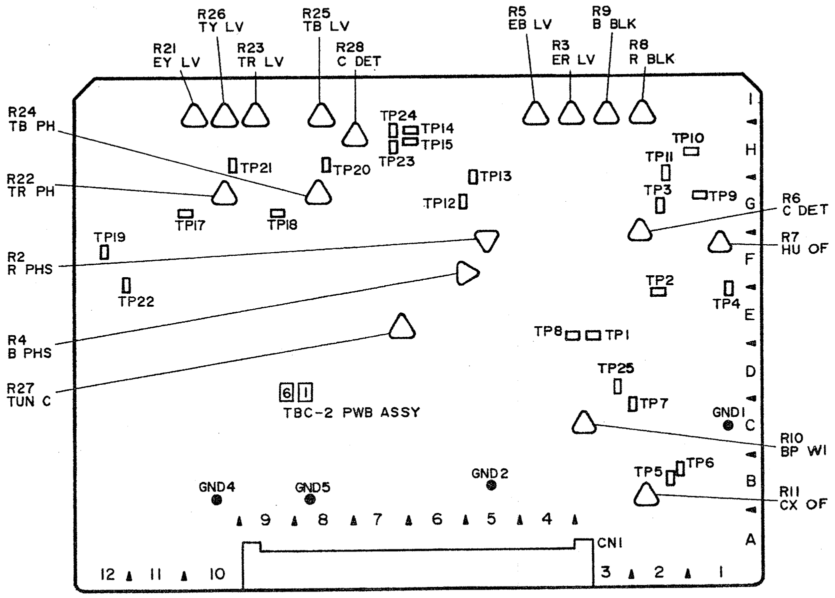
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
5	**A/D B-Y level**	TP3: 11C 	R5: 13C	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R5 so that output (B-Y level) at TP3 is 1.0Vp-p. 3) Return SW3 to "NORM" position.
6	**A/D B-Y clamp level**	CN2pin22A (EXT. board) or COMPONENT •B-Y OUT (75Ω terminator) 	R6: 9B	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R6 to remove DC level difference in the blanking portion of CN2 pin 22A, (COMPONENT B-Y OUT). 3) Return SW3 to "NORM" position.
7	**Y output level**	Y/C 443 •Y OUT or VIDEO OUT (75Ω terminator)  While setting SW3 on the TBC-1 board to "NORM" and "ADJ" alternately, adjust level "A" to be stable on the same level.	R9: 141	Color bar	E-E	1) Set the VIDEO LEVEL switch inside the front panel to "VAR" position, and adjust the voltage at pin 5A of CN1 to be 5.0V_{DC} with the VIDEO LEVEL VR. 2) Set the SW3 on TBC-1 to "NORM". 3) Adjust the oscilloscope's GAIN control so that level "A" of Y/C 443 Y OUT becomes 6.0 scale divitions on the scope. 4) Set the SW3 to "ADJ". 5) Adjust R9 so that level "A" of Y/C443 Y OUT becomes 6.0, scale divitions. 6) Set the VIDEO LEVEL switch inside the front panel to "UNITY" position. 7) Adjust R11 so that level "A" of Y/C443 Y OUT becomes 6.0 scale divitions.
		VIDEO OUT (75Ω terminator)	R7: 131	Color bar	E-E	8) Adjust R7 to obtain 0.3Vp-p as the sync level. 9) Return SW3 to "NORM" position.
8	**Sync rise-up time**	CN2pin20A (EXT. board)  Set the 5.0 scale divisions 0.5 scale div. 4.0 scale divisions 0.5 scale div. 250±50nsec	R8: 12F	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Observe the rise portion of the waveform at the VIDEO OUT with an oscilloscope. 3) Adjust R8 to set the rise-up time of sync signal to be 250 nsec in the portion between 10% and 90%. ***Suggestion*** ***Adjust the oscilloscope's GAIN control to set the sync level for 5 scale divitions, and then adjust the time for the 4 scale divitions in the center to be 250 nsec.*** 4) Return SW3 to "NORM" position.

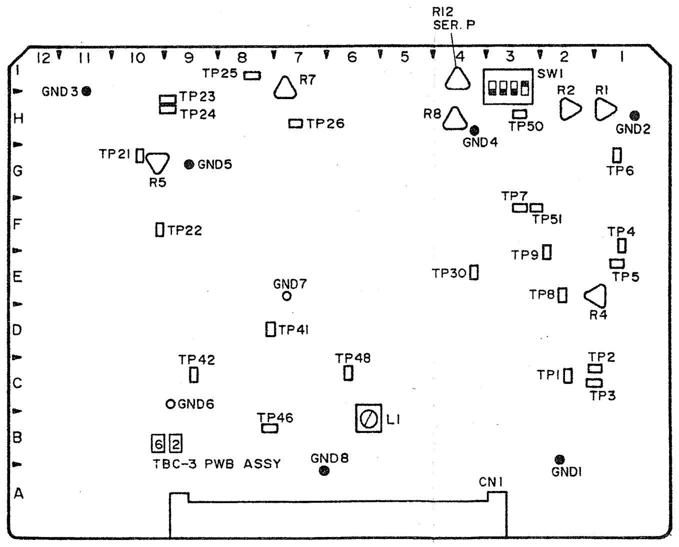
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
9	**Y OUT frequency response**	CN2pin20A (EXT. board) or VIDEO OUT (75Ω terminator)	R10: 15D  V-rate: TRIG:D-FF ⊖ SLOPE While setting SW3 on the TBC-1 board to "NORM" and "ADJ" alternately, adjust 3.0 signal level to be stable on the same level.	Sweep (nonburst)	E-E S-VHS	1) Set S2 on the Y COMB board to "B/W" while setting SW3 on the TBC-1 board to "NORM". 2) Set 100kHz signal level for 5.0 scale divisions on the oscilloscope screen, and take note of 3.0 MHz signal level as "A". 3) Set SW3 on the TBC-1 board to "ADJ". 4) While setting 100kHz signal level for 5.0 scale divisions on the oscilloscope screen in the same manner as the above step 2), adjust R10 to equalize 3MHz siganl level to the level "A" taken note of previously. 5) After the adjustment of 3MHz siganl level, return both of S2 on the Y COMB board and SW3 on the TBC-1 board to "NORM" position respectively.
10	**SC frequency**	VIDEO OUT (75Ω terminator) ↓ Vectorscope	R12: 21  Color bar signal LINE IN LINE IN (Loop through) VIDEO OUT VTR B-INPUT A-INPUT Vectorscope  cy g R MG 75% YL b yl B G CY mg r Adjust R12 so that the waveform does not rotate or turns around in a complete circle in more than 5 seconds. (Rotational direction is disregarded for this adjustment.)	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Connect the VIDEO OUT terminal with the vectorscope's A-INPUT terminal to supply output signal from it. 3) While disconnecting input signal to the VTR's EXT. REF terminal, connect output signal from the LINE IN (loop through) terminal to the vectorscope's B-INPUT terminal. 4) Select the B-INPUT signal as the vectorscope's REF signal, and confirm that the waveform rotates in the screen. ***Reference*** ***If the signal generator's subcarrier output is supplied to the vectorscope's EXT. CW Φ REF terminal for external triggering of the vectorscope with the Φ REF signal, it is capable of this adjustment as well as the above-mentioned method.*** 5) Stop the waveform rotation by adjusting R12. *Note If waveform does not stop rotation by turning R12, readjust it so that the waveform slowly rotates and it takes 5 seconds or more for turning around in a complete circle.* 6) After completing the above adjustments, restore all the connections changed for the adjustment to the original connections. 7) Return SW3 to "NORM" position.
11	**Carrier balance**	Y/C 443 •C OUT (75Ω termainator)	R20: 121 R21: 121  H-rate TRIG:VIDEO OUT ⊖ SLOPE	Color bar	E-E	1) Set SW3 on the TBC-1 board to "ADJ". 2) Adjust R20 and R21 so that carrier leak is minimum at the Y/C 443 C OUT terminals. Note : Adjust R20 and R21 alternately to obtain minimum carrier leak. 3) Return SW3 to "NORM" position.

No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
12	**Encoder burst level**	VIDEO OUT (75Ω terminator) ↓ Vectorscorpe  cy R MG g 75% YL b yl B G CY mg r Adjust VRs to position two bursts on the markers respectively.	R18: 13H R19: 13I	Color bar	E-E	1) Set SW3 on the TBC-1 board to "NORM" position. 2) Adjust the GAIN and PHASE controls of the vectorscope so that every luminous point of the color bar signal is positioned in ⊞ mark. 3) Set SW3 on the TBC-1 board to "ADJ" position. 4) Adjust R18 and R19 alternately to set the two bursts in the respective normal positions. 5) Return SW3 to "NORM" position.
13	**Encoder color level**	VIDEO OUT (75Ω terminator) ↓ Vectorscorp Correct level with R14  cy g R MG 75% YL b yl B G CY mg r Position all dots of signals at the correct points. Correct level with R17	R14: 11I(R-Y) R17: 11I(B-Y) (TBC1) R7: 1F (PHASE) (TBC2)	Color bar	E-E	1) INPUT the color bar signal directly to the vectorscope (75Ω terminated), and adjust the GAIN control to position all dots of respective colors in the ⊞ marking. 2) Set the SW3 of TBC-1 board to "NORM". 3) Confirm that luminescent points of color bars are positioned in ⊞ mark respectively. 4) If any luminescent point is out of the ⊞ mark, turn off the AGC switch on the VTR's front panel and adjust the VIDEO LEVEL VR (on the VTR's front panel) to position it in the mark. 5) Set the SW3 to "ADJ". 6) Temporarily adjust R14 to position the Red signal in the specified point (⊞ marking) 7) Temporarily adjust R17 to position the Blue signal at the specified level (⊞ marking) 8) Adjust R14, R17 (TBC 1 board) and R7 (TBC 2 board) to position all dots of respective colors in the ⊞ markings.
14	**Y/C timing**	VIDEO OUT (75Ω terminator)  Flat or symmetric	SW1: 7I	Pulse & bar	E-E	1) Set the Y/C TIMING switch on the sub panel to "8" position. 2) Set SW3 on the TBC-1 board to "ADJ". 3) Set SW1 to simmetrize the modulated 20T pulse in the base of the waveform possibly. 4) Return SW3 to "NORM" position.

■ LOCATION OF TEST POINTS AND ADJUSTMENT PARTS

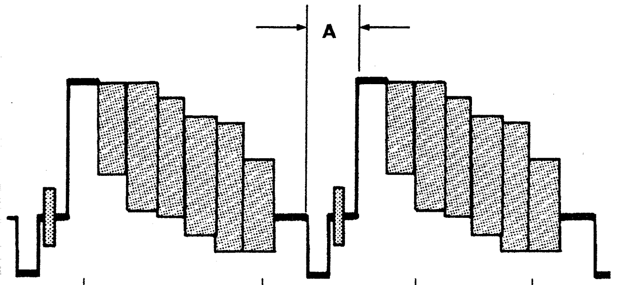
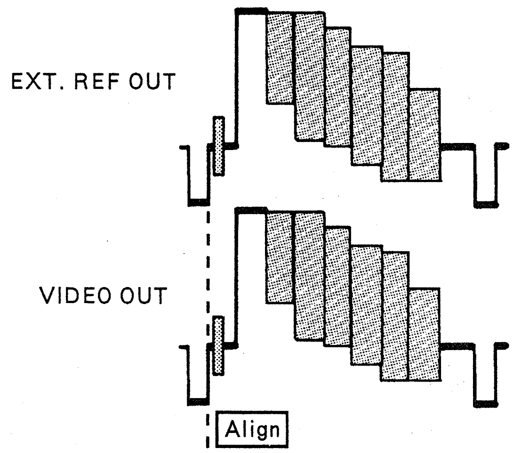
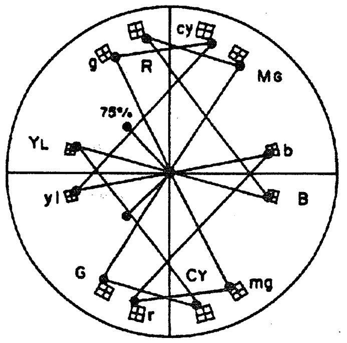

R7 SYNC
R20 R BAL
R17 ENC R
R9 Y LEV.
R19 RB LV
R21 B BAL
R17 ENC B
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
GND6
SW1
SW3
(ON) ADJ
(OFF) NOR
SW2
R12
I
H
G
F
E
D
C
B
A
R18
TP8
TP11
TP13
TP12
TP9
GND4
TP10
GND7
GND5
TP14
R8
TP1
TP4
R2
GND2
R10
TP2
R1
R3
R5
TP3
6 0
TBC-1 PWB ASSY
TP7
R6
GND3
GND1
R4
CN2
CN1
TP5


R26 TY LV
R25 TB LV
R5 EB LV
R9 B BLK
R21 EY LV
R23 TR LV
R28 C DET
R3 ER LV
R8 R BLK
R24 TB PH
TP24
TP14
TP15
TP23
TP10
TP11
TP21
TP20
TP13
R22 TR PH
TP3
TP9
R6 C DET
TP12
TP17
TP18
TP19
R7 HU OF
R2 R PHS
TP22
TP2
TP4
R4 B PHS
TP8
TP1
TP25
R27 TUN C
6 1
TBC-2 PWB ASSY
TP7
GND1
R10 BP WI
TP5
TP6
GND4
GND5
GND2
R11 CX OF
9
8
7
6
5
4
CN1
12
11
10
3
2
1
I
H
G
F
E
D
C
B
A


R12 SER. P
12
11
10
9
8
7
6
5
4
3
2
1
TP25
R7
SW1
GND3
TP23
TP24
R2
R1
TP26
R8
TP50
GND2
GND4
TP21
GND5
R5
TP6
TP7
TP51
TP22
TP4
TP9
TP30
GND7
TP8
TP5
R4
TP41
TP42
TP48
TP2
TP1
TP3
GND6
TP46
L1
6 2
TBC-3 PWB ASSY
GND8
GND1
CN1
I
H
G
F
E
D
C
B
A

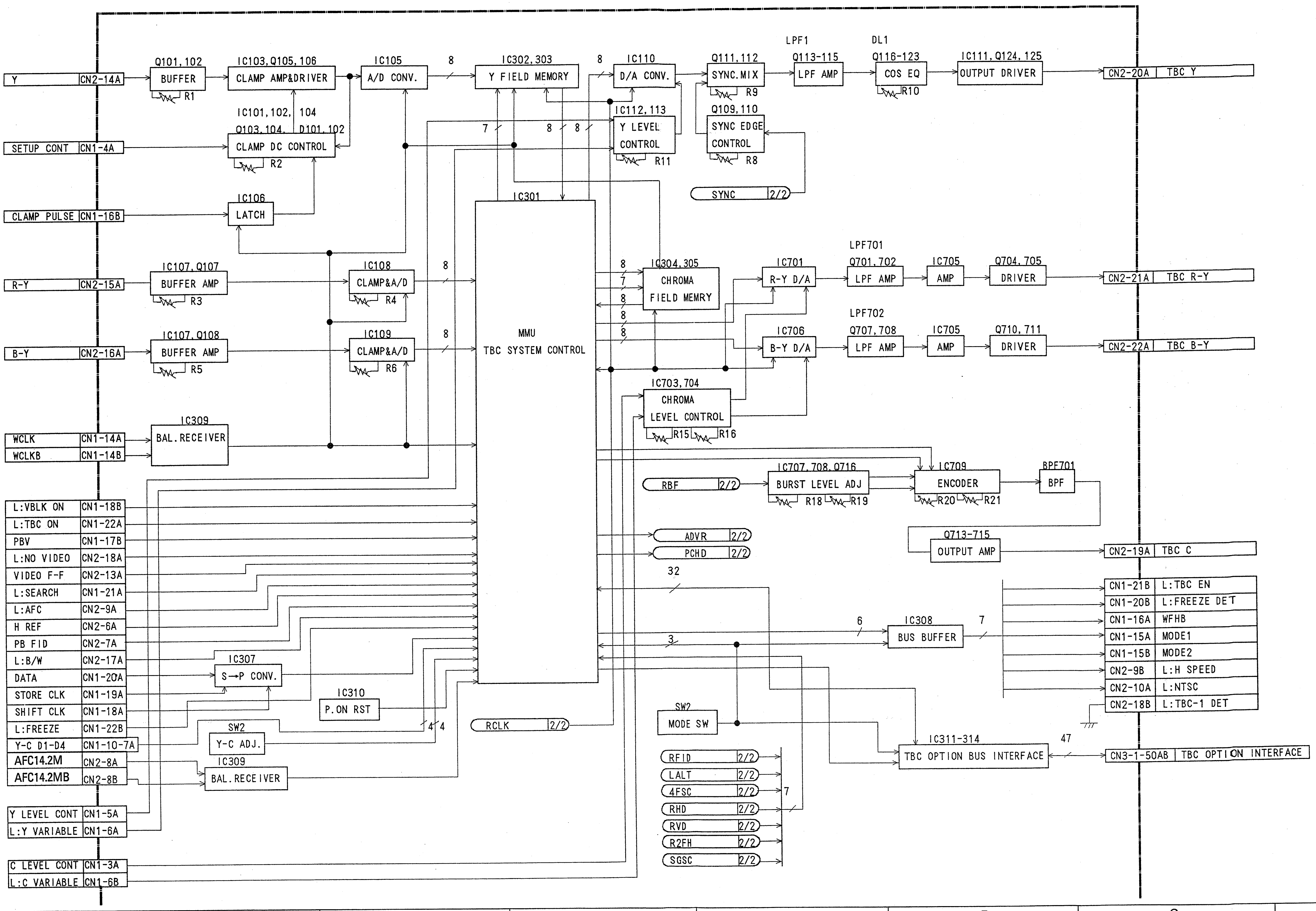
2. 4 SUB PANEL CIRCUIT

Note:
- *Subject of the following adjustments is the BR-S822E/BR-S622E equipped with the SA-T22E(TBC-1,2,3 boards).*
- *Before proceeding to the following adjustment, make sure that the TBC-1,2,3 boards are correctly adjusted.*
- *Unless otherwise indicated, all check points and adjustment parts are located on the SUB PANEL board. (BR-S822E/BR-S622E)*
- *For check and adjustment of this circuit, supply color bar signal to the EXT. REF IN terminal of the VIDEO LINE IN connector.*

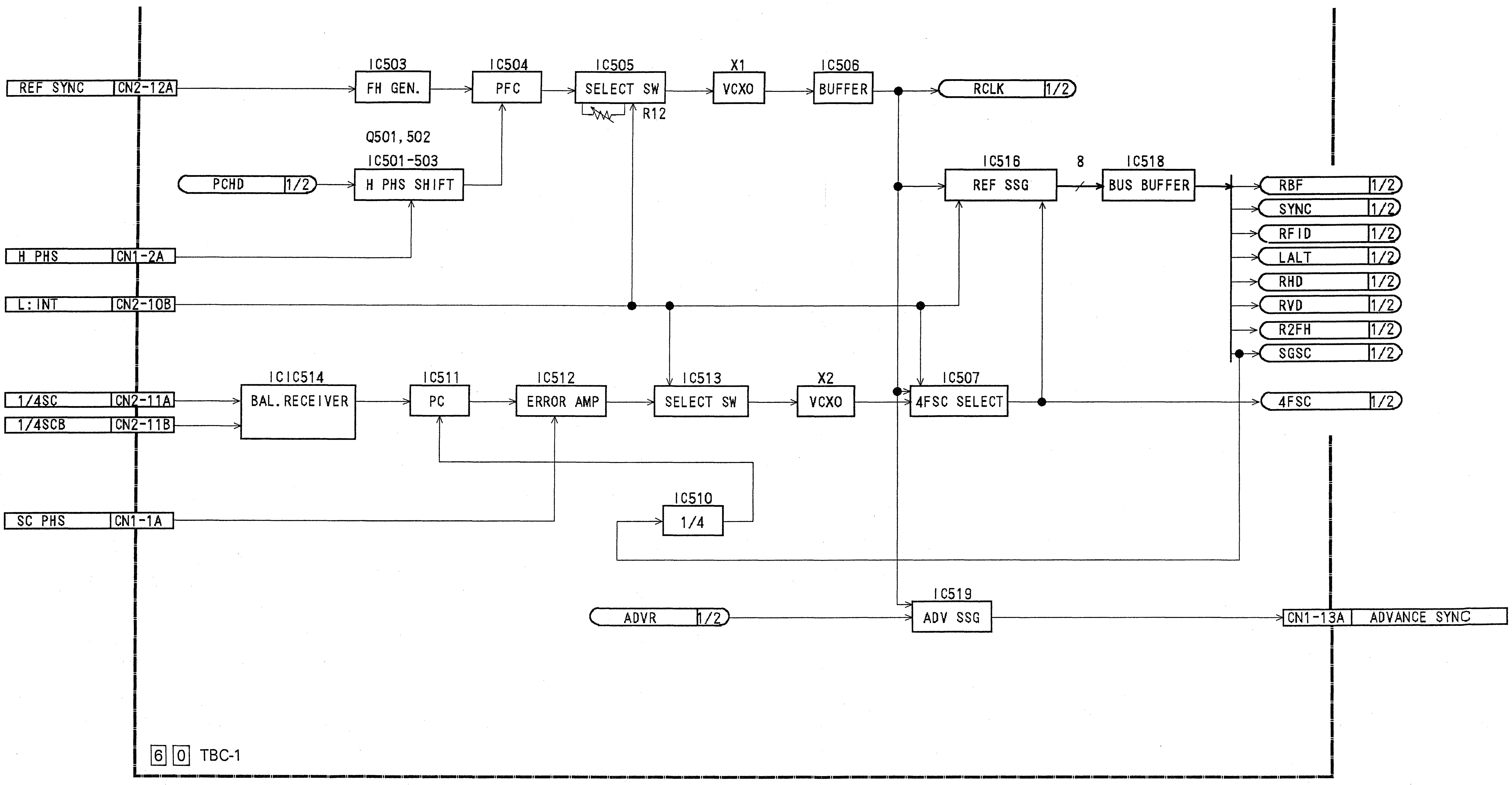
No.	Item	Check point	Adjustment	Signal	Mode	Check and Adjustment
1	**Video phase**	VIDEO OUT (75Ω terminator) 	VIDEO PHASE VR	Color bar	E-E	1) Set the switch SW3 on the TBC-1 board to "NORM". 2) Adjust the oscilloscope's GAIN control so that the portion "A" (see the figure) of the output waveform from the VIDEO OUT becomes for 4.0 scale divisions on the scope. 3) Set the switch SW3 to "ADJ". 4) Adjust the VIDEO PHASE VR so that the portion "A" (see the figure) of the output waveform from the VIDEO OUT becomes for 4.0 scale divisions on the oscilloscope. 5) Return SW3 to "NORM" position.
2	**Genlock H phase**	VIDEO OUT EXT. REF. OUT (75Ω terminator) 	SYSTEM PHASE VR	Color bar	E-E	1) Set the switch SW3 to "ADJ". 2) Obeserve output waveforms at the VIDEO OUT and EXT. REF OUT terminals. 3) Adjust the SYSTEM PHASE VR so that the two waveforms mentioned above become the same in the phase (to be the same waveform). 4) Return SW3 to "NORM" position.
3	**Genlock SC phase**	VIDEO OUT (75Ω terminator) ↓ Vectorscope Adjust the SC PHASE VR so that the two waveforms mentioned above become the same in the phase.  cy g R MG 75% YL b yl B G CY mg r	SC PHASE VR	Color bar	E-E	1) Set the switch SW3 on the TBC-1 board to "ADJ" position. 2) Connect a vectorscope's A INPUT terminal to the VIDEO OUT terminal and B INPUT terminal to the EXT. REF OUT terminal. 3) Trigger the vectorscope externally (B-INPUT). 4) Set the vectorscope's PHASE and GAIN controls to position the burst signal of the B INPUT terminal correctly. 5) Adjust the SC PHASE VR to position the burst signal of A INPUT correctly. 6) Return SW3 to "NORM" position.

SECTION 3
DIAGRAM AND CIRCUIT BOARDS

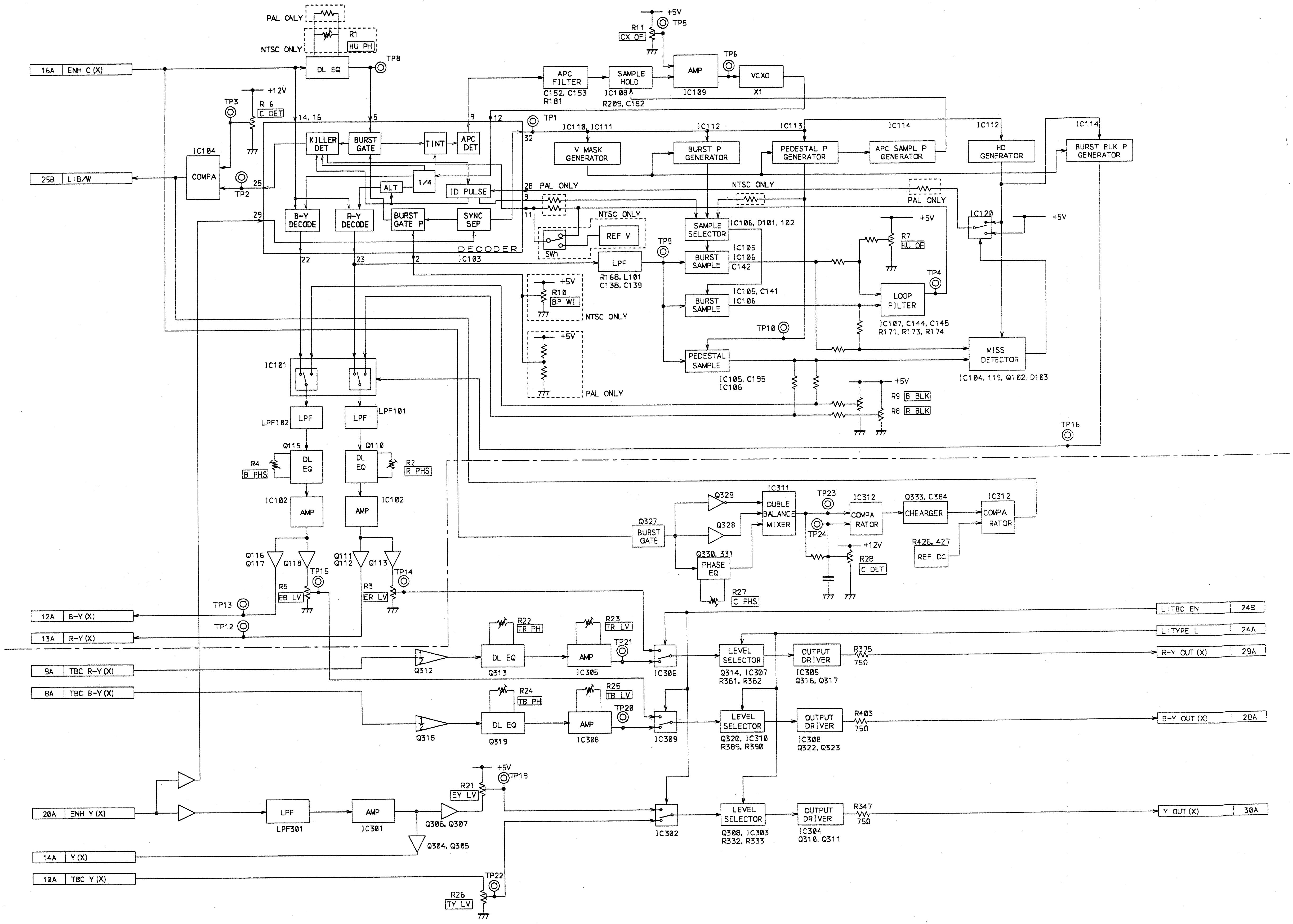
3.1 TBC-1 BLOCK DIAGRAM (1/2)


Y
CN2-14A
Q101, 102
BUFFER
R1
IC103, Q105, 106
CLAMP AMP&DRIVER
IC105
A/D CONV.
8
IC302, 303
Y FIELD MEMORY
8
IC110
D/A CONV.
Q111, 112
SYNC.MIX
R9
LPF1
Q113-115
LPF AMP
DL1
Q116-123
COS EQ
R10
IC111, Q124, 125
OUTPUT DRIVER
CN2-20A
TBC Y
IC101, 102, 104
Q103, 104, D101, 102
SETUP CONT
CN1-4A
CLAMP DC CONTROL
R2
7
8
8
IC112, 113
Y LEVEL CONTROL
R11
Q109, 110
SYNC EDGE CONTROL
R8
SYNC
2/2
CLAMP PULSE
CN1-16B
IC106
LATCH
IC301
LPF701
R-Y
CN2-15A
IC107, Q107
BUFFER AMP
R3
IC108
CLAMP&A/D
R4
8
8
7
8
IC304, 305
CHROMA FIELD MEMRY
IC701
R-Y D/A
Q701, 702
LPF AMP
IC705
AMP
Q704, 705
DRIVER
CN2-21A
TBC R-Y
LPF702
8
8
B-Y
CN2-16A
IC107, Q108
BUFFER AMP
R5
IC109
CLAMP&A/D
R6
8
MMU
TBC SYSTEM CONTROL
IC706
B-Y D/A
Q707, 708
LPF AMP
IC705
AMP
Q710, 711
DRIVER
CN2-22A
TBC B-Y
IC703, 704
CHROMA LEVEL CONTROL
R15
R16
WCLK
CN1-14A
WCLKB
CN1-14B
IC309
BAL.RECEIVER
IC707, 708, Q716
BURST LEVEL ADJ
R18
R19
RBF
2/2
IC709
ENCODER
R20
R21
BPF701
BPF
L:VBLK ON
CN1-18B
L:TBC ON
CN1-22A
PBV
CN1-17B
L:NO VIDEO
CN2-18A
VIDEO F-F
CN2-13A
L:SEARCH
CN1-21A
L:AFC
CN2-9A
H REF
CN2-6A
PB FID
CN2-7A
L:B/W
CN2-17A
DATA
CN1-20A
STORE CLK
CN1-19A
SHIFT CLK
CN1-18A
L:FREEZE
CN1-22B
Y-C D1-D4
CN1-10-7A
AFC14.2M
CN2-8A
AFC14.2MB
CN2-8B
ADVR
2/2
PCHD
2/2
Q713-715
OUTPUT AMP
CN2-19A
TBC C
32
CN1-21B
L:TBC EN
CN1-20B
L:FREEZE DET
CN1-16A
WFHB
CN1-15A
MODE1
CN1-15B
MODE2
CN2-9B
L:H SPEED
CN2-10A
L:NTSC
CN2-18B
L:TBC-1 DET
6
IC308
BUS BUFFER
7
3
IC307
S→P CONV.
IC310
P.ON RST
SW2
Y-C ADJ.
4
4
RCLK
2/2
SW2
MODE SW
IC311-314
TBC OPTION BUS INTERFACE
47
CN3-1-50AB
TBC OPTION INTERFACE
IC309
BAL.RECEIVER
RFID
2/2
LALT
2/2
4FSC
2/2
RHD
2/2
RVD
2/2
R2FH
2/2
SGSC
2/2
7
Y LEVEL CONT
CN1-5A
L:Y VARIABLE
CN1-6A
C LEVEL CONT
CN1-3A
L:C VARIABLE
CN1-6B

— BLOCK DIAGRAM (2/2) —

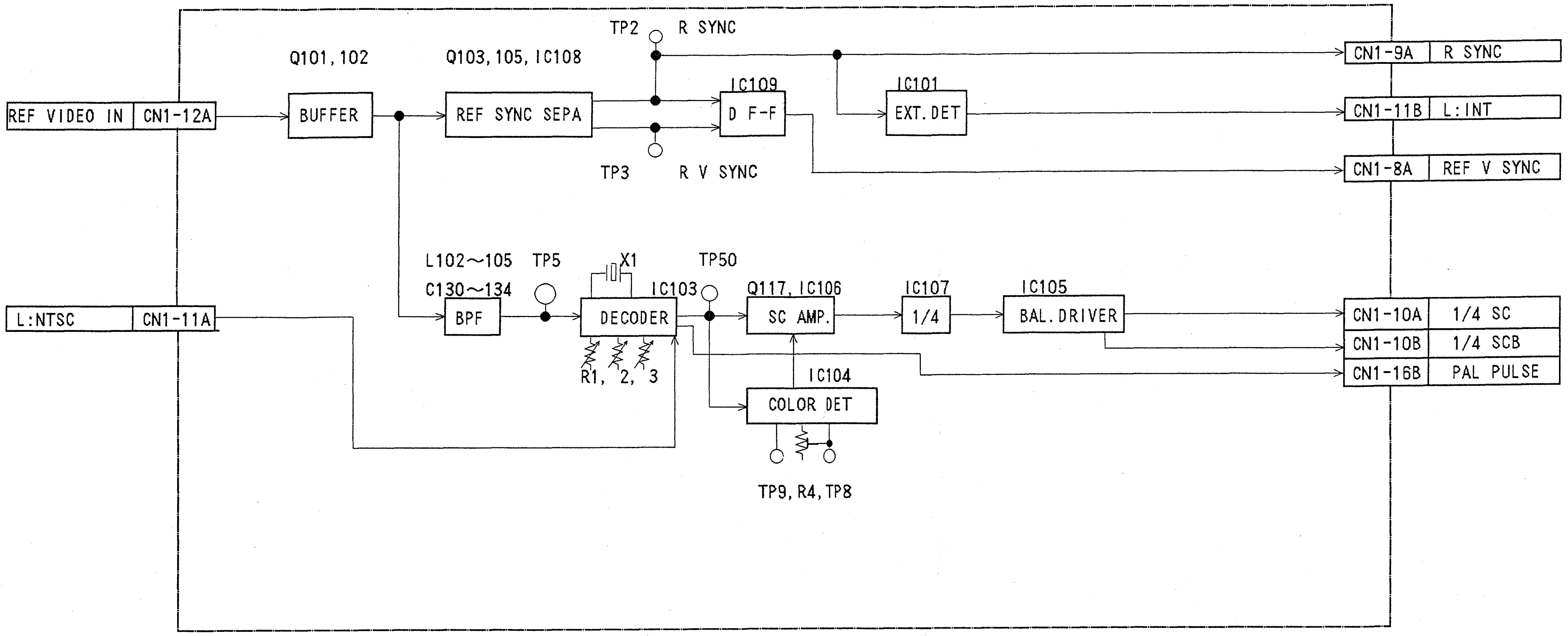

REF SYNC
CN2-12A
IC503
FH GEN.
IC504
PFC
IC505
SELECT SW
R12
X1
VCXO
IC506
BUFFER
RCLK
1/2
Q501, 502
IC501-503
PCHD
1/2
H PHS SHIFT
IC516
REF SSG
8
IC518
BUS BUFFER
RBF 1/2
SYNC 1/2
RFID 1/2
LALT 1/2
RHD 1/2
RVD 1/2
R2FH 1/2
SGSC 1/2
H PHS
CN1-2A
L: INT
CN2-10B
1/4SC
CN2-11A
1/4SCB
CN2-11B
ICIC514
BAL. RECEIVER
IC511
PC
IC512
ERROR AMP
IC513
SELECT SW
X2
VCXO
IC507
4FSC SELECT
4FSC 1/2
SC PHS
CN1-1A
IC510
1/4
ADVR
1/2
IC519
ADV SSG
CN1-13A
ADVANCE SYNC
6 0 TBC-1

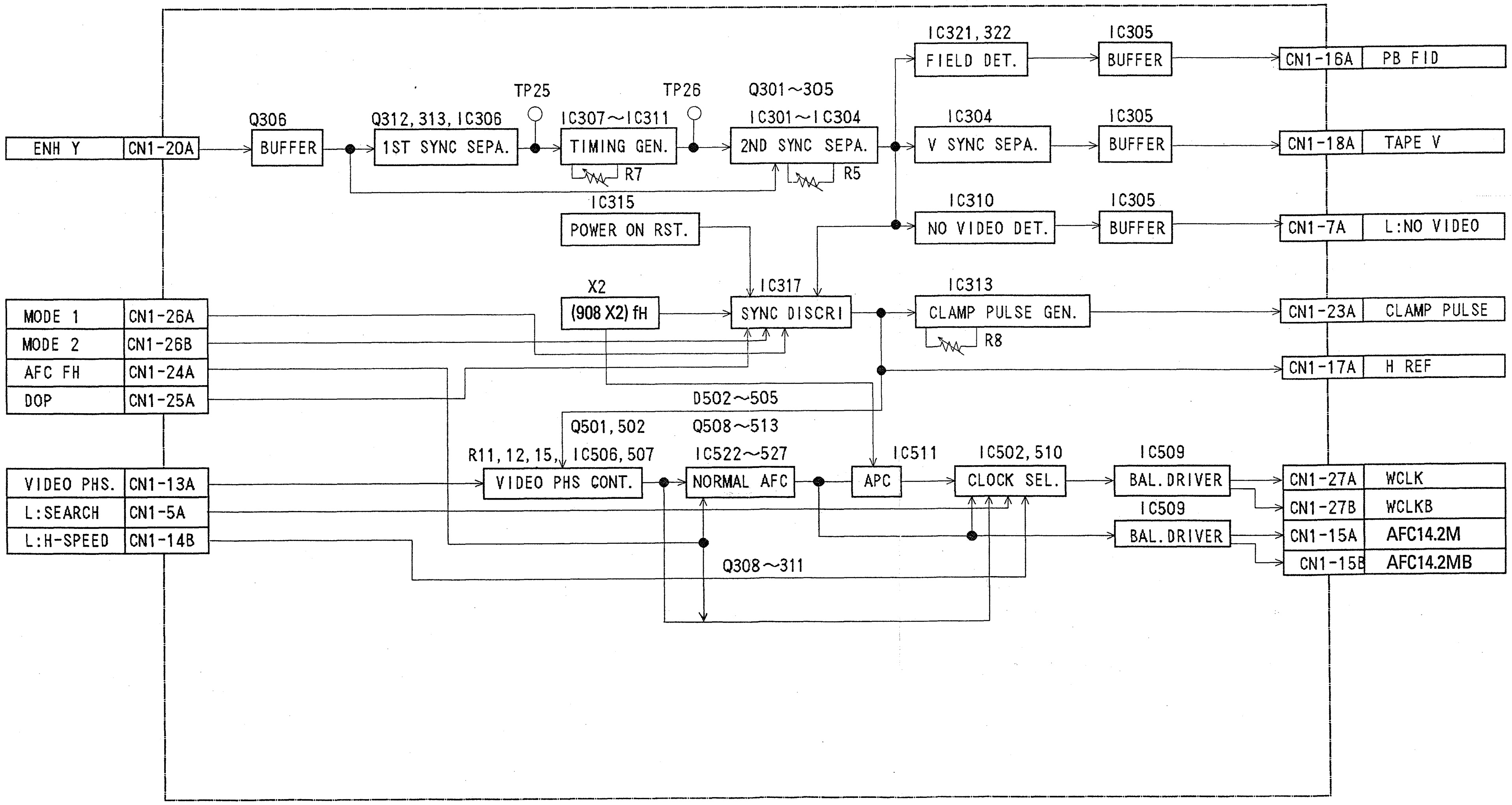
3.2 TBC-2 BLOCK DIAGRAM



PAL ONLY
NTSC ONLY
R1 HU PH
16A ENH C (X)
DL EQ
TP8
+12V
R 6 C DET
TP3
14, 16
5
9
12
TP1
KILLER DET
BURST GATE
TINT
APC DET
32
IC104
COMPA
25B L:B/W
TP2
25
ALT
1/4
ID PULSE
28 PAL ONLY
29
B-Y DECODE
R-Y DECODE
BURST GATE P
SYNC SEP
DECODER
22
23
2
IC103
+5V
R11 CX OF
TP5
APC FILTER
C152, C153 R181
SAMPLE HOLD
IC108 R209, C182
AMP
IC109
TP6
VCXO
X1
IC110, IC111
V MASK GENERATOR
IC112
BURST P GENERATOR
IC113
PEDESTAL P GENERATOR
IC114
APC SAMPL P GENERATOR
HD GENERATOR
BURST BLK P GENERATOR
NTSC ONLY
11
NTSC ONLY
REF V
SW1
SAMPLE SELECTOR
IC106, D101, 102
TP9
LPF
R168, L101 C138, C139
BURST SAMPLE
IC105 IC106 C142
IC105, C141 IC106
+5V
R7 HU OF
TP4
LOOP FILTER
IC107, C144, C145 R171, R173, R174
IC120
R10 BP WI
NTSC ONLY
TP10
PEDESTAL SAMPLE
IC105, C195 IC106
MISS DETECTOR
IC104, 115, Q102, D103
PAL ONLY
R9 B BLK
R8 R BLK
TP16
IC101
LPF102
LPF101
Q115
Q110
R4 B PHS
DL EQ
R2 R PHS
IC102
AMP
Q116 Q117
Q118
Q111 Q112
Q113
TP15
TP14
R5 EB LV
R3 ER LV
TP13
TP12
12A B-Y (X)
13A R-Y (X)
IC311
Q329
Q328
DUBLE BALANCE MIXER
TP23
TP24
IC312
COMPA RATOR
Q333, C384
CHEARGER
Q327 BURST GATE
Q330, 331 PHASE EQ
R27 C PHS
+12V
R28 C DET
R426, 427 REF DC
L:TBC EN 24B
L:TYPE L 24A
R22 TR PH
R23 TR LV
TP21
9A TBC R-Y (X)
8A TBC B-Y (X)
Q312
Q313
IC305
IC306
LEVEL SELECTOR
Q314, IC307 R361, R362
OUTPUT DRIVER
IC305 Q316, Q317
R375 75Ω
R-Y OUT (X) 29A
R24 TB PH
R25 TB LV
TP20
Q318
Q319
IC308
IC309
Q320, IC310 R389, R390
IC308 Q322, Q323
R403 75Ω
B-Y OUT (X) 28A
20A ENH Y (X)
LPF301
IC301
+5V
R21 EY LV
TP19
Q306, Q307
Q304, Q305
IC302
Q308, IC303 R332, R333
IC304 Q310, Q311
R347 75Ω
Y OUT (X) 30A
14A Y (X)
10A TBC Y (X)
TP22
R26 TY LV
1
2
3
4
5
6
A
B
C
E
F
G
H

3.3 TBC-3 BLOCK DIAGRAM


REF VIDEO IN
CN1-12A
Q101, 102
BUFFER
Q103, 105, IC108
REF SYNC SEPA
TP2
R SYNC
IC109
D F-F
IC101
EXT. DET
TP3
R V SYNC
CN1-9A
R SYNC
CN1-11B
L: INT
CN1-8A
REF V SYNC
L:NTSC
CN1-11A
L102～105
C130～134
BPF
TP5
X1
IC103
DECODER
R1, 2, 3
TP50
Q117, IC106
SC AMP.
IC107
1/4
IC105
BAL. DRIVER
IC104
COLOR DET
TP9, R4, TP8
CN1-10A
1/4 SC
CN1-10B
1/4 SCB
CN1-16B
PAL PULSE


ENH Y
CN1-20A
Q306
BUFFER
Q312, 313, IC306
1ST SYNC SEPA.
TP25
IC307～IC311
TIMING GEN.
R7
TP26
Q301～305
IC301～IC304
2ND SYNC SEPA.
R5
IC315
POWER ON RST.
IC321, 322
FIELD DET.
IC305
BUFFER
CN1-16A
PB FID
IC304
V SYNC SEPA.
IC305
BUFFER
CN1-18A
TAPE V
IC310
NO VIDEO DET.
IC305
BUFFER
CN1-7A
L:NO VIDEO
MODE 1
CN1-26A
MODE 2
CN1-26B
AFC FH
CN1-24A
DOP
CN1-25A
X2
(908 X2) fH
IC317
SYNC DISCRI
IC313
CLAMP PULSE GEN.
R8
CN1-23A
CLAMP PULSE
CN1-17A
H REF
D502～505
Q501, 502
Q508～513
R11, 12, 15,
IC506, 507
IC522～527
IC511
IC502, 510
IC509
VIDEO PHS.
CN1-13A
L:SEARCH
CN1-5A
L:H-SPEED
CN1-14B
VIDEO PHS CONT.
NORMAL AFC
APC
CLOCK SEL.
BAL. DRIVER
IC509
BAL. DRIVER
Q308～311
CN1-27A
WCLK
CN1-27B
WCLKB
CN1-15A
AFC14.2M
CN1-15B
AFC14.2MB

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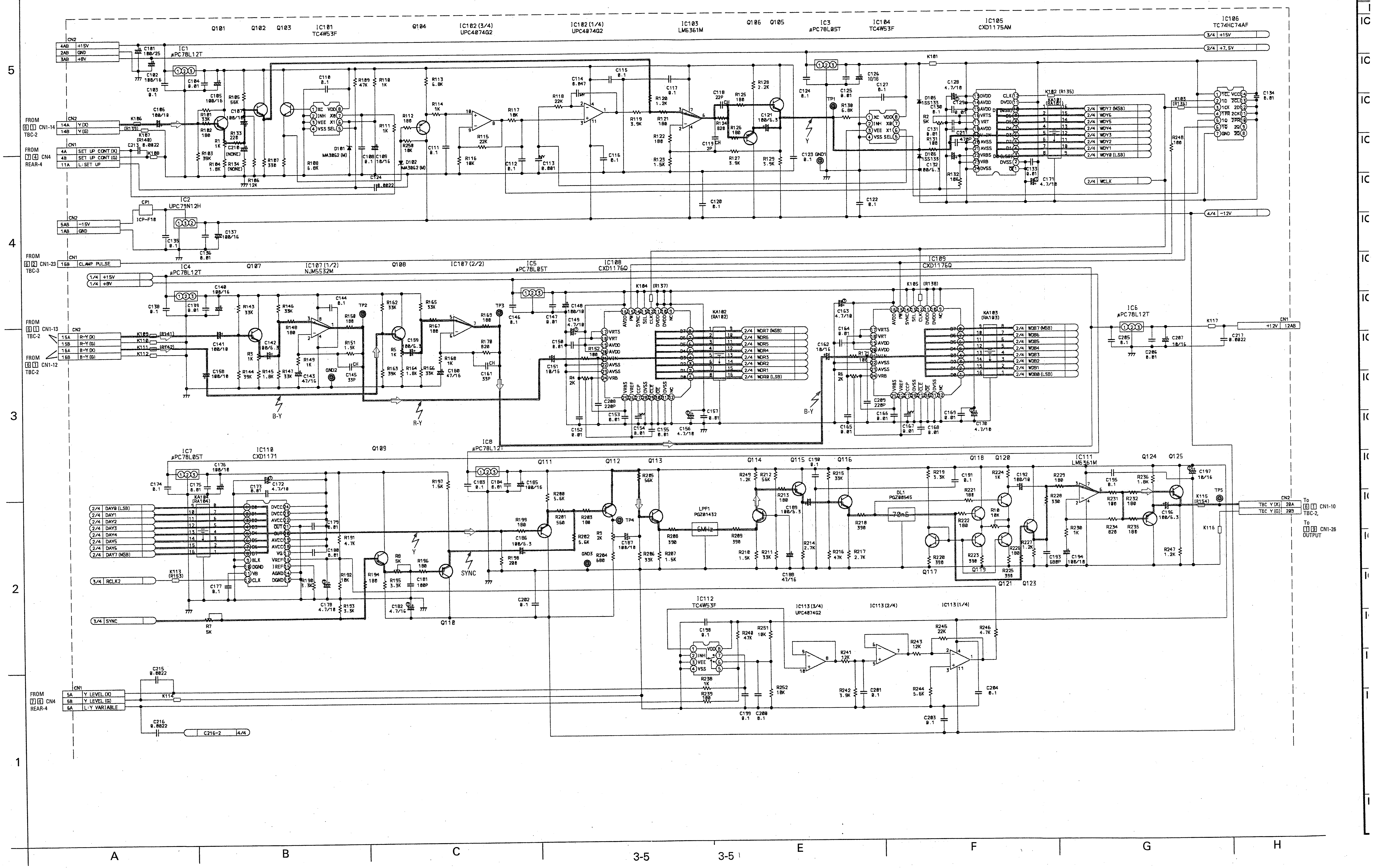
3.4 TBC-1 SCHEMATIC DIAGRAM

— DIAGRAM (1/4) —



Q101
Q102
Q103
IC101 TC4W53F
Q104
IC102 (3/4) UPC4074G2
IC102 (1/4) UPC4074G2
IC103 LM6361M
Q106
Q105
IC3 μPC78L05T
IC104 TC4W53F
IC105 CXD1175AM
IC106 TC74HC74AF
IC1 μPC78L12T
IC2 UPC79N12H
CN2
4AB +15V
2AB GND
3AB +8V
5AB -15V
1AB GND
FROM 6 1 CN1-14 TBC-2
14A Y (X)
14B Y (G)
FROM 7 4 CN4 REAR-4
4A SET UP CONT (X)
4B SET UP CONT (G)
11A L SET UP
FROM 6 2 CN1-23 TBC-3
15B CLAMP PULSE
3/4 +15V
2/4 +7.5V
4/4 -12V
2/4 WCLK
IC4 μPC78L12T
Q107
IC107 (1/2) NJM5532M
Q108
IC107 (2/2)
IC5 μPC78L05T
IC108 CXD1176Q
IC109 CXD1176Q
IC6 μPC78L12T
1/4 +15V
1/4 +8V
FROM 6 1 CN1-13 TBC-2
FROM 6 1 CN1-12 TBC-2
15A R-Y (X)
15B R-Y (G)
16A B-Y (X)
16B B-Y (G)
B-Y
R-Y
KA102 (RA102)
KA103 (RA103)
+12V 12AB
IC7 μPC78L05T
IC110 CXD1171
Q109
IC8 μPC78L12T
Q111
Q112
Q113
Q114
Q115
Q116
Q118
Q120
IC111 LM6361M
Q124
Q125
2/4 DAY0 (LSB)
2/4 DAY7 (MSB)
3/4 RCLK2
3/4 SYNC
SYNC
LPF1 PGZ01432
5MHz
DL1 PGZ0545
70nS
Q110
Q117
Q119
Q121
Q123
TP1
TP2
TP3
TP4
TP5
GND1
GND2
GND3
To 6 1 CN1-10 TBC-2
To 1 9 CN1-26 OUTPUT
TBC Y (X) 20A
TBC Y (G) 20B
IC112 TC4W53F
IC113 (3/4) UPC4074G2
IC113 (2/4)
IC113 (1/4)
FROM 7 4 CN4 REAR-4
5A Y LEVEL (X)
5B Y LEVEL (G)
6A L Y VARIABLE
C216-2 4/4
A
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C
D
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F
G
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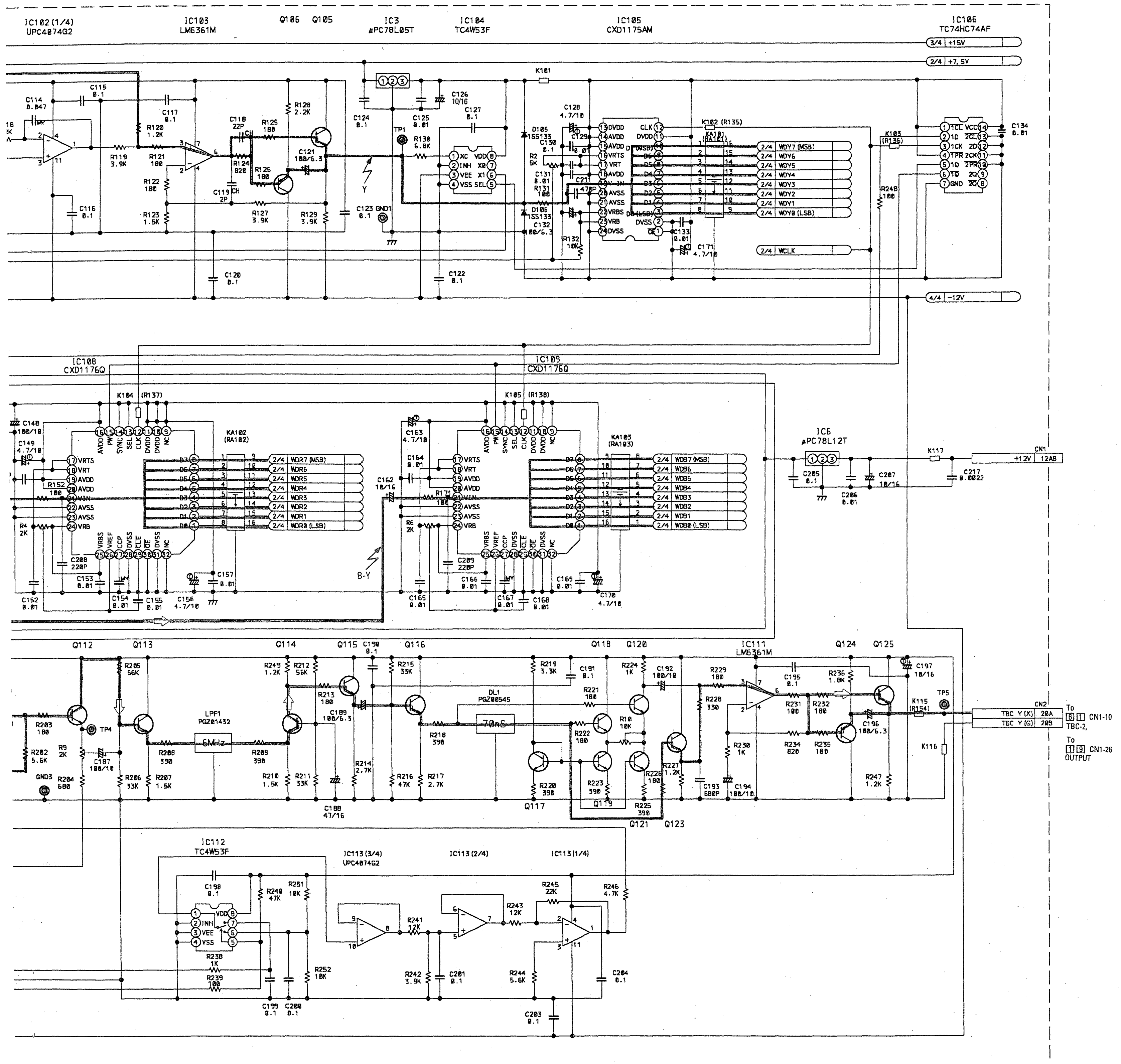

IC102(1/4) UPC4074G2
IC103 LM6361M
Q106 Q105
IC3 µPC78L05T
IC104 TC4W53F
IC105 CXD1175AM
IC106 TC74HC74AF
3/4 +15V
2/4 +7.5V
4/4 -12V
Y
IC108 CXD1176Q
IC109 CXD1176Q
B-Y
IC6 µPC78L12T
CN1 +12V
Q112 Q113 Q114 Q115 Q116 Q118 Q120
IC111 LM6361M
Q124 Q125
LPF1 PGZ01432
5MHz
DL1 PGZ00545
70nS
Q117 Q119 Q121 Q123
TBC Y(X)
TBC Y(G)
To CN1-10 TBC-2,
To CN1-26 OUTPUT
IC112 TC4W53F
IC113(3/4) UPC4074G2
IC113(2/4)
IC113(1/4)
E
F
G
H

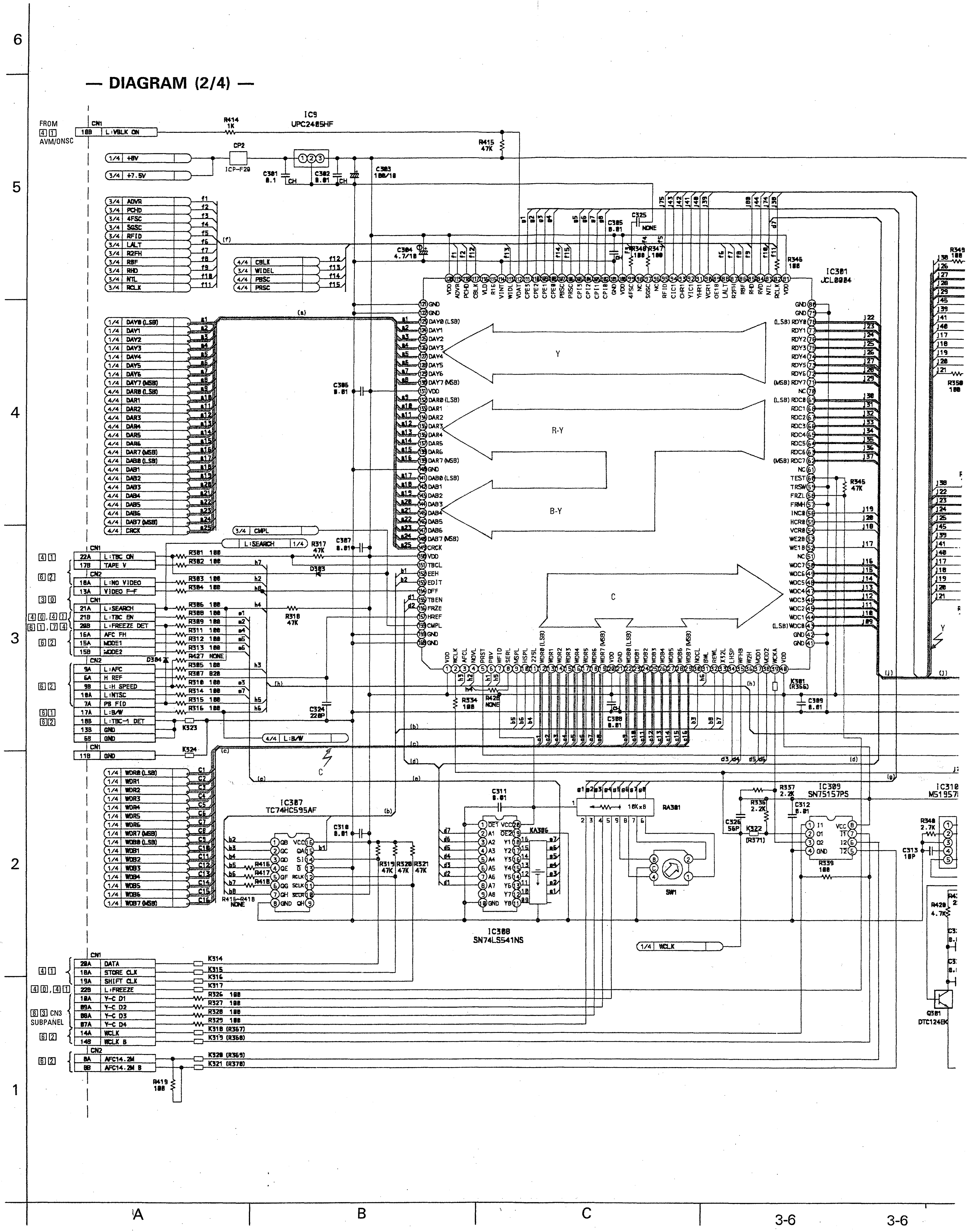
- DC voltage (1/4) - (TBC 1)

SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
INTEGRATED CIRCUIT			IC102	4	12.2	IC106	13	0.0	IC109	22	0.0	IC113	13	- 0.2
IC 1	1	14.8		5	0.5		14	5.2		23	0.0		14	-10.8
	2	0.0		6	0.5	IC107	1	6.2		24	0.6	IC301	1	5.1
	3	12.2		7	0.5		2	6.2		25	0.6		2	1.8
IC 2	1	0.0		8	0.3		3	6.2		26	1.6		3	5.1
	2	−14.9		9	0.1		4	0.0		27	2.7		4	5.1
	3	−12.1		10	0.1		5	6.1		28	0.0		5	5.1
IC 3	1	7.9		11	−12.1		6	6.1		29	0.0		6	5.1
	2	0.0		12	0.0		7	6.1		30	0.0		7	2.7
	3	5.2		13	0.0		8	12.2		31	0.0		8	5.1
IC 4	1	14.8		14	−10.9	IC108	1	1.3		32	0.0		9	5.1
	2	0.0	IC103	1	−11.6		2	1.6	IC110	1	1.9		10	5.1
	3	12.2		2	0.4		3	1.7		2	1.9		11	0.0
IC 5	1	7.9		3	0.4		4	1.8		3	1.7		12	1.4
	2	0.0		4	−12.1		5	1.8		4	2.0		13	1.7
	3	5.2		5	0.0		6	1.9		5	3.6		14	1.7
IC 6	1	14.8		6	1.9		7	2.0		6	1.7		15	1.8
	2	0.0		7	12.2		8	3.0		7	1.9		16	1.8
	3	12.2		8	−11.6		9	5.2		8	1.0		17	1.9
IC 7	1	7.9	IC104	1	1.2		10	5.2		9	0.0		18	2.0
	2	0.0		2	0.0		11	5.2		10	0.0		19	3.1
	3	5.2		3	−12.1		12	1.9		11	0.5		20	5.1
IC 8	1	14.8		4	0.0		13	5.2		12	2.7		21	0.0
	2	0.0		5	0.1		14	5.2		13	0.0		22	1.4
	3	12.2		6	0.5		15	5.1		14	0.0		23	1.6
IC 9	1	7.9		7	1.2		16	5.2		15	1.1		24	1.7
	2	0.0		8	5.2		17	2.6		16	1.0		25	1.9
	3	5.1	IC105	1	0.0		18	2.6		17	3.8		26	2.0
IC 10	1	14.8		2	0.0		19	5.2		18	5.2		27	2.1
	2	0.0		3	1.3		20	5.2		19	5.2		28	2.0
	3	12.2		4	1.3		21	1.6		20	0.3		29	3.0
IC 11	1	7.9		5	1.2		22	0.0		21	0.0		30	5.1
	2	0.0		6	1.8		23	0.0		22	5.2		31	5.2
	3	5.2		7	3.0		24	0.6		23	5.2		32	5.1
IC 12	1	7.9		8	1.6		25	0.6		24	5.2		33	5.1
	2	0.0		9	1.9		26	1.6	IC111	1	0.6		34	5.1
	3	5.2		10	1.0		27	2.7		2	5.7		35	2.6
IC 13	1	7.9		11	0.0		28	0.0		3	5.7		36	0.0
	2	0.0		12	1.9		29	0.0		4	0.0		37	0.0
	3	5.2		13	5.2		30	0.0		5	- 0.1		38	0.0
IC 14	1	7.9		14	5.2		31	0.0		6	5.7		39	3.1
	2	0.0		15	5.2		32	0.0		7	12.2		40	5.1
	3	5.2		16	2.8	IC109	1	1.3		8	0.6		41	0.0
IC 15	1	14.8		17	2.8		2	1.5	IC112	1	6.2		42	0.0
	2	0.0		18	5.2		3	1.7		2	0.0		43	1.2
	3	12.2		19	1.3		4	1.9		3	0.0		44	1.1
IC 16	1	7.9		20	0.0		5	2.1		4	0.0		45	P
	2	0.0		21	0.0		6	2.1		5	12.2		46	1.5
	3	5.2		22	0.7		7	0.0		6	6.2		47	1.6
IC 17	1	14.8		23	0.7		8	2.9		7	7.2		48	1.4
	2	0.0		24	0.0		9	5.2		8	12.2		49	1.5
	3	12.2	IC106	1	5.2		10	5.2	IC113	1	- 2.7		50	2.7
IC101	1	6.2		2	0.1		11	5.2		2	0.0		51	0.8
	2	0.0		3	1.9		12	1.9		3	0.0		52	0.8
	3	0.0		4	5.2		13	5.2		4	12.2		53	5.9
	4	0.0		5	0.1		14	5.2		5	1.5		54	0.9
	5	12.2		6	5.1		15	5.1		6	1.5		55	0.9
	6	6.2		7	0.0		16	5.2		7	1.5		56	0.9
	7	4.0		8	5.2		17	0.0		8	6.2		57	0.9
	8	12.2		9	5.2		18	2.6		9	6.2		58	5.9
IC102	1	- 2.9		10	0.0		19	5.2		10	6.2		59	0.9
	2	0.5		11	0.0		20	5.2		11	−12.1		60	5.1
	3	0.5		12	0.0		21	1.6		12	- 0.2		61	0.0

- DC voltage (2/4) - (TBC 1)

SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC301	62	—	IC301	125	1.7	IC302	28	0.0	IC304	15	0.0	IC307	1	5.1
	63	—		126	2.0		29	0.0		16	0.0		2	5.1
	64	—		127	3.5		30	0.0		17	1.9		3	0.0
	65	—		128	1.7		31	5.1		18	0.0		4	5.1
	66	—		129	0.0		32	0.0		19	5.1		5	5.1
	67	1.8		130	1.0		33	0.0		20	0.0		6	5.1
	68	1.6		131	5.1		34	0.0		21	0.0		7	5.1
	69	1.8		132	2.0		35	0.0		22	0.0		8	0.0
	70	0.0		133	2.0		36	0.0		23	0.0		9	5.1
	71	0.8		134	2.0		37	0.0		24	2.5		10	5.1
	72	1.7		135	1.9		38	0.0		25	1.6		11	5.0
	73	1.4		136	1.9	IC303	1	0.4		26	1.8		12	0.0
	74	2.9		137	1.9		2	0.4		27	1.6		13	0.0
	75	1.8		138	1.9		3	5.1		28	0.0		14	5.0
	76	1.9		139	3.2		4	2.6		29	0.0		15	5.1
	77	1.9		140	0.0		5	2.0		30	0.0		16	0.0
	78	1.9		141	2.0		6	2.0		31	5.1	IC308	1	0.0
	79	0.0		142	1.9		7	2.0		32	0.0		2	5.1
	80	0.0		143	1.9		8	2.0		33	0.0		3	0.0
	81	5.9		144	1.9		9	0.0		34	0.0		4	0.0
	82	2.6		145	2.0		10	0.0		35	0.0		5	2.6
	83	5.1		146	2.0		11	0.0		36	0.0		6	5.1
	84	5.1		147	1.9		12	0.0		37	0.0		7	5.1
	85	0.0		148	3.1		13	0.0		38	0.0		8	5.1
	86	5.0		149	1.6		14	0.0	IC305	1	0.4		9	1.3
	87	1.7		150	5.1		15	0.0		2	0.4		10	0.0
	88	2.6		151	4.4		16	0.0		3	5.1		11	3.9
	89	0.0		152	5.1		17	1.9		4	2.6		12	4.2
	90	0.0		153	5.1		18	– 0.9		5	2.0		13	5.0
	91	0.0		154	2.4		19	5.1		6	1.9		14	3.8
	92	0.0		155	5.1		20	0.0		7	1.8		15	2.1
	93	0.0		156	5.1		21	– 1.5		8	1.8		16	0.1
	94	0.0		157	0.6		22	0.0		9	0.0		17	0.1
	95	2.5		158	4.8		23	0.0		10	0.0		18	3.7
	96	0.0		159	0.0		24	1.9		11	0.0		19	0.0
	97	2.6		160	0.0		25	1.3		12	0.0		20	5.1
	98	0.0	IC302	1	0.4		26	1.6		13	0.0	IC309	1	1.6
	99	2.3		2	0.4		27	1.5		14	0.0		2	1.8
	100	5.1		3	0.0		28	0.0		15	0.0		3	1.9
	101	0.0		4	2.6		29	0.0		16	0.0		4	0.0
	102	5.1		5	3.3		30	0.0		17	1.9		5	1.6
	103	5.1		6	1.5		31	5.0		18	– 1.1		6	1.6
	104	5.1		7	2.3		32	0.6		19	5.1		7	1.6
	105	0.0		8	1.0		33	0.6		20	0.0		8	5.1
	106	2.0		9	0.0		34	0.6		21	– 1.9	IC310	1	5.1
	107	0.1		10	0.0		35	0.7		22	0.0		2	1.7
	108	0.1		11	0.0		36	0.0		23	0.0		3	0.0
	109	0.1		12	0.0		37	0.0		24	1.7		4	1.2
	110	5.1		13	0.0		38	0.0		25	1.7		5	5.1
	111	5.1		14	0.0	IC304	1	0.4		26	1.8	IC311	1	0.0
	112	5.0		15	0.0		2	0.4		27	1.9		2	2.7
	113	5.1		16	0.0		3	0.0		28	0.0		3	0.0
	114	0.0		17	1.9		4	2.7		29	0.0		4	0.0
	115	2.5		18	0.0		5	1.8		30	0.0		5	0.0
	116	5.0		19	5.1		6	P		31	5.1		6	5.1
	117	4.2		20	0.0		7	P		32	0.9		7	5.1
	118	2.6		21	0.0		8	P		33	0.8		8	2.8
	119	5.0		22	0.0		9	0.0		34	0.8		9	2.7
	120	5.1		23	0.0		10	0.0		35	0.8		10	0.0
	121	0.0		24	1.0		11	0.0		36	0.0		11	0.0
	122	0.0		25	2.3		12	0.0		37	0.0		12	0.0
	123	1.8		26	1.5		13	0.0		38	0.0		13	0.0
	124	1.8		27	3.3		14	0.0					14	0.0

— DIAGRAM (2/4) —



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A
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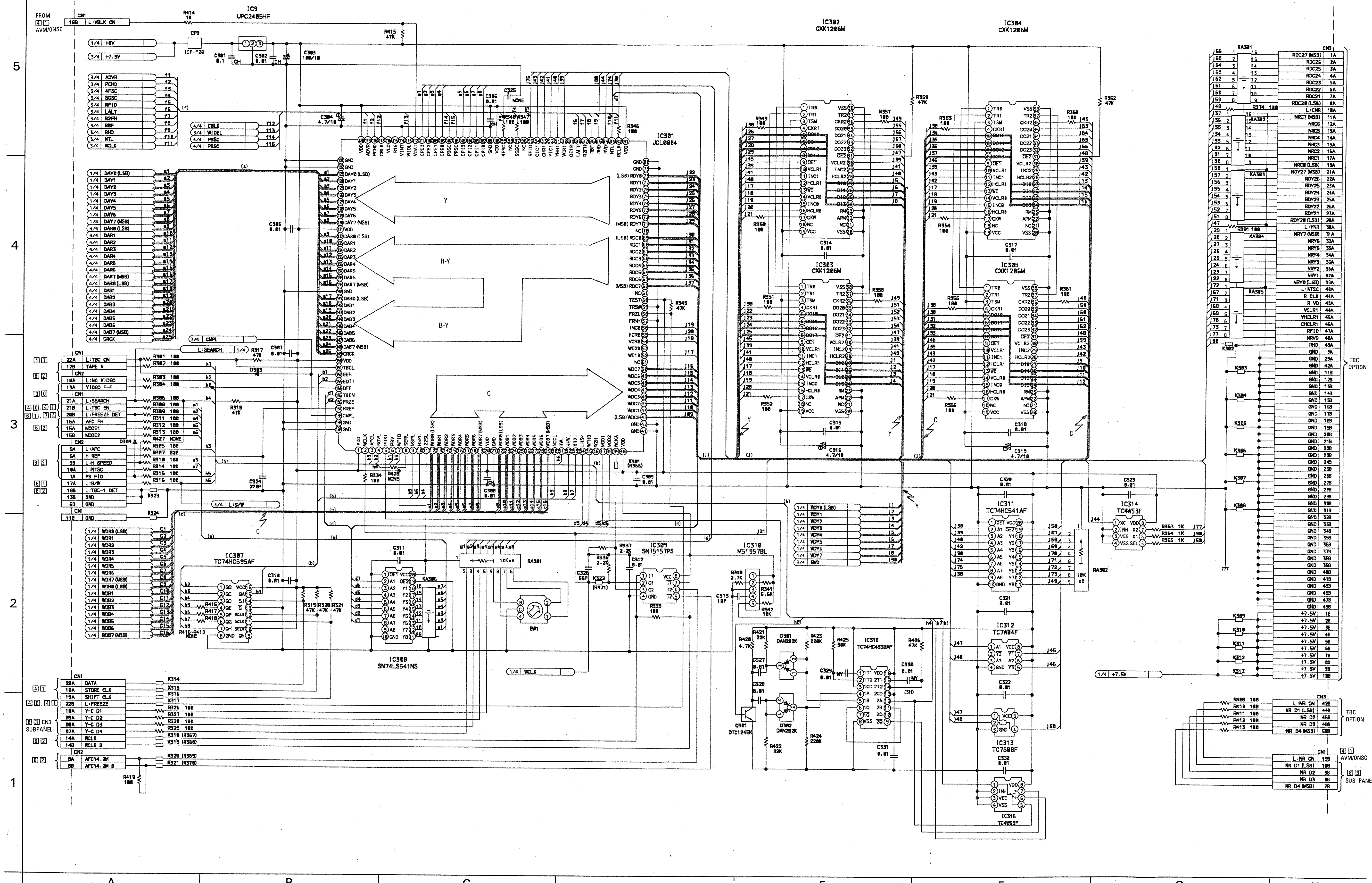
C
FROM
AVM/ONSC
IC9
UPC2485HF
IC301
JCL0084
IC307
TC74HC595AF
IC308
SN74LS541NS
IC309
SN75157PS
IC310
M51957
RA301
SW1
Q301
DTC124EK
Y
R-Y
B-Y
C
CN1
CN2
CN3
SUBPANEL
L:VBLK ON
+8V
+7.5V
L:TBC ON
TAPE V
L:NO VIDEO
VIDEO F-F
L:SEARCH
L:TBC EN
L:FREEZE DET
AFC FH
MODE1
MODE2
L:AFC
H REF
L:H SPEED
L:NTSC
PB FID
L:B/W
L:TBC-1 DET
GND
DATA
STORE CLK
SHIFT CLK
L:FREEZE
Y-C D1
Y-C D2
Y-C D3
Y-C D4
WCLK
WCLK B
AFC14.2M
AFC14.2M B

— DIAGRAM (2/4) —


FROM
AVM/ONSC
IC9
UPC2405HF
CP2
ICP-F20
IC301
JCL0004
IC302
CXK1206M
IC303
CXK1206M
IC304
CXK1206M
IC305
CXK1206M
Y
R-Y
B-Y
C
IC307
TC74HC595AF
IC308
SN74LS541NS
RA301
SW1
IC309
SN75157PS
IC310
M51957BL
Q301
DTC124EK
D301
DAN202K
D302
DAN202K
IC315
TC74HC4538AF
IC311
TC74HC541AF
IC312
TC7W04F
IC313
TC7S08F
IC316
TC4W53F
IC314
TC4W53F
RA302
KA301
KA302
KA303
KA304
KA305
CN3
TBC OPTION
SUBPANEL
SUB PANEL
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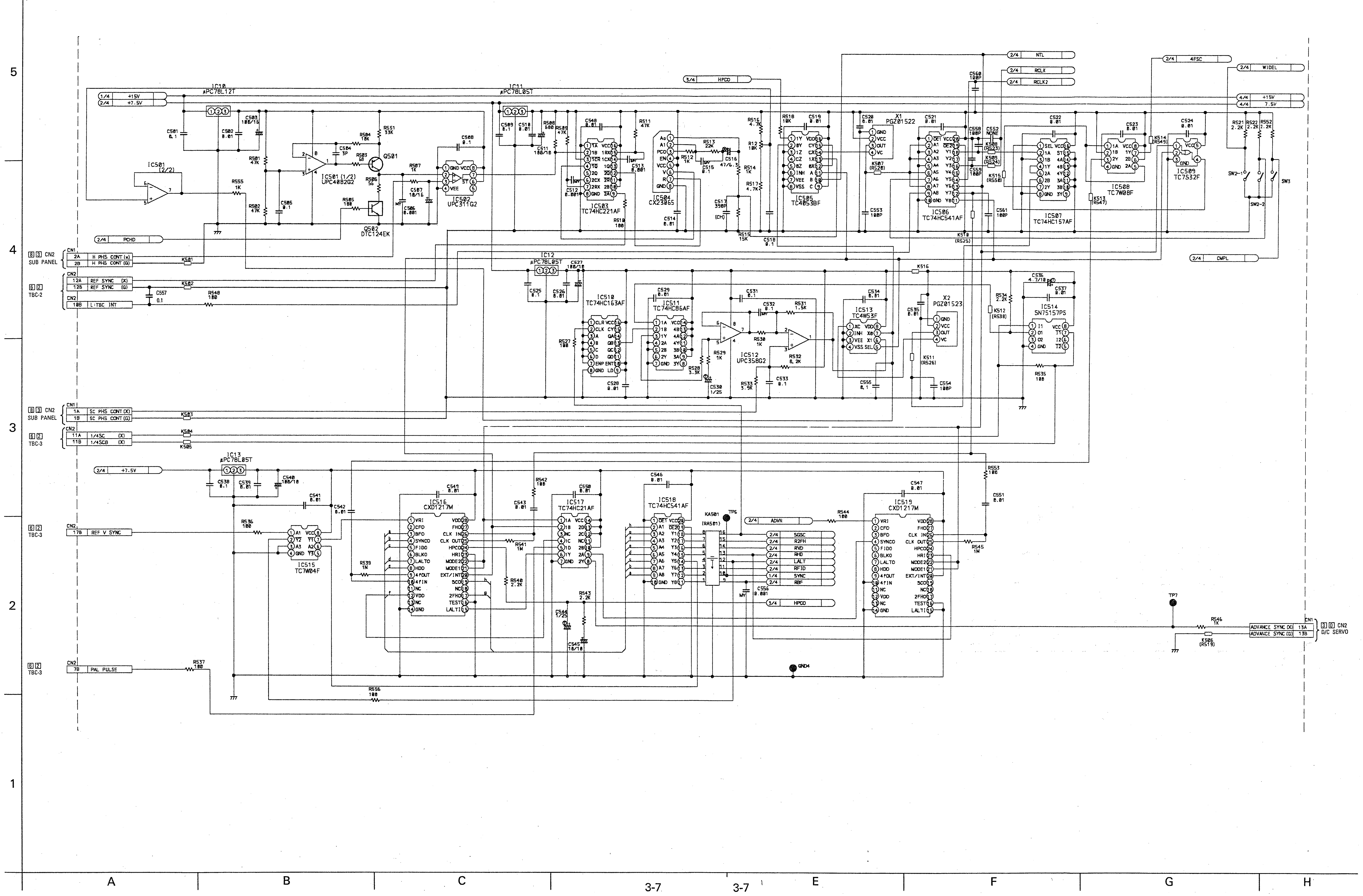
— DIAGRAM (3/4) —



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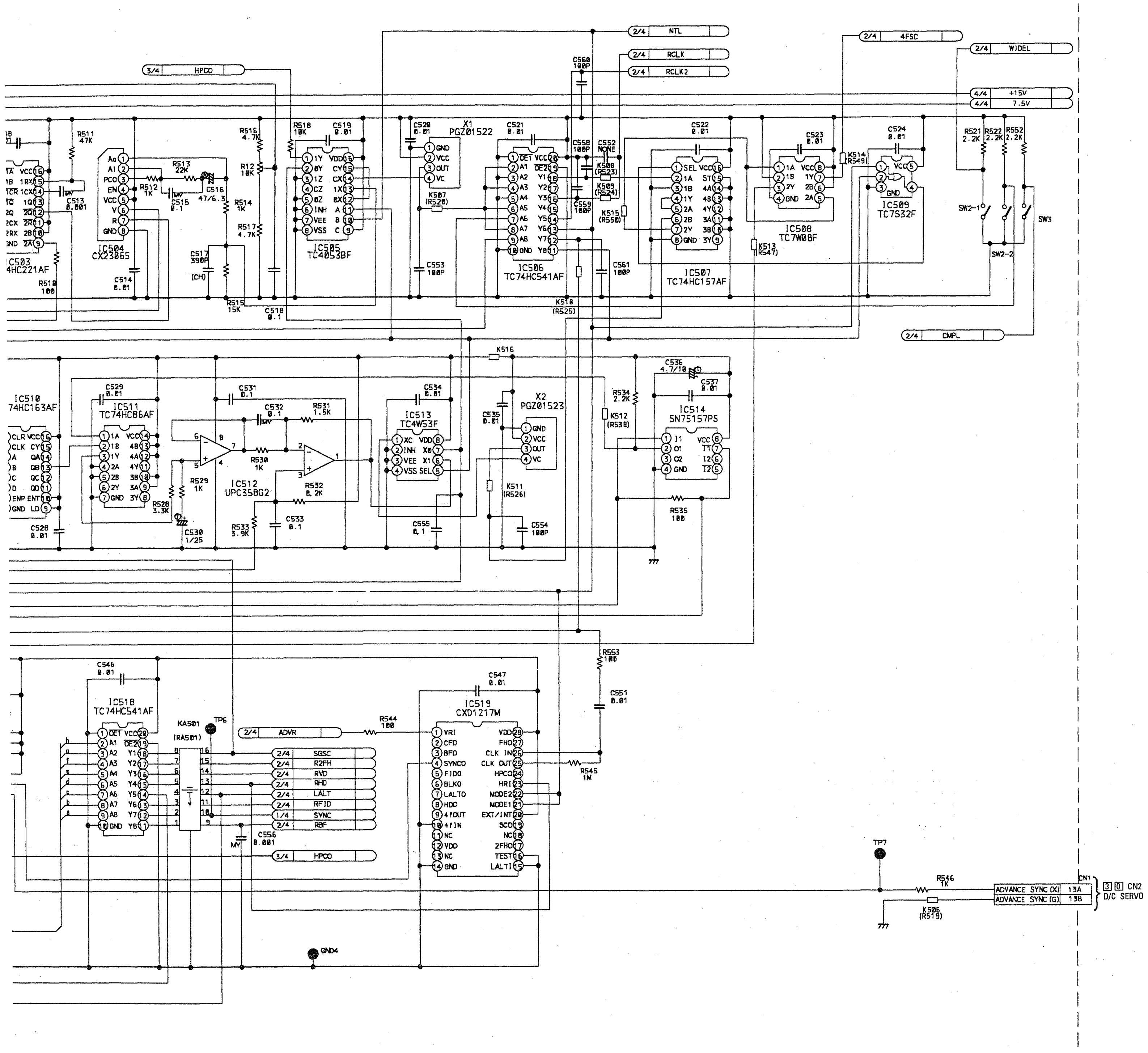
F
G
H
1/4 +15V
2/4 +7.5V
IC10 μPC78L12T
IC11 μPC78L05T
IC12 μPC78L05T
IC13 μPC78L05T
IC501 (2/2)
IC501 (1/2) UPC4082G2
Q501
Q502 DTC124EK
IC502 UPC311G2
IC503 TC74HC221AF
IC504 CX23065
IC505 TC4053BF
X1 PGZ01522
IC506 TC74HC541AF
IC507 TC74HC157AF
IC508 TC7W08F
IC509 TC7S32F
2/4 PCHD
3/4 HPCD
2/4 NTL
2/4 RCLK
2/4 RCLK2
2/4 4FSC
2/4 WIDEL
4/4 +15V
4/4 7.5V
2/4 CMPL
SW2-1
SW2-2
SW3
8 3 CN2 SUB PANEL
2A H PHS CONT (R)
2B H PHS CONT (G)
6 2 TBC-2
12A REF SYNC (X)
12B REF SYNC (G)
10B L:TBC INT
IC510 TC74HC163AF
IC511 TC74HC86AF
IC512 UPC358G2
IC513 TC4W53F
X2 PGZ01523
IC514 SN75157PS
1A SC PHS CONT (R)
1B SC PHS CONT (G)
6 2 TBC-3
11A 1/4SC (X)
11B 1/4SCB (X)
2/4 +7.5V
17B REF V SYNC
IC515 TC7W04F
IC516 CXD1217M
IC517 TC74HC21AF
IC518 TC74HC541AF
KA501 (RA501)
TP6
2/4 ADVR
2/4 SGSC
2/4 R2FH
2/4 RVD
2/4 RHD
2/4 LALT
2/4 RFID
1/4 SYNC
2/4 RBF
3/4 HPCD
IC519 CXD1217M
TP7
GND4
7B PAL PULSE
ADVANCE SYNC (X) 13A
ADVANCE SYNC (G) 13B
3 8 CN2 D/C SERVO

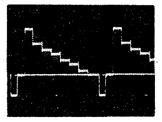

2/4 NTL
2/4 RCLK
2/4 RCLK2
2/4 4FSC
2/4 WIDEL
4/4 +15V
4/4 7.5V
3/4 HPCD
2/4 CMPL
IC503 74HC221AF
IC504 CX23065
IC505 TC4053BF
X1 PGZ01522
IC506 TC74HC541AF
IC507 TC74HC157AF
IC508 TC7W08F
IC509 TC7S32F
SW2-1
SW2-2
SW3
IC510 74HC163AF
IC511 TC74HC86AF
IC512 UPC358G2
IC513 TC4W53F
X2 PGZ01523
IC514 SN75157PS
IC518 TC74HC541AF
KA501 (RA501)
TP6
2/4 ADVR
2/4 SGSC
2/4 R2FH
2/4 RVD
2/4 RHD
2/4 LALT
2/4 RFID
1/4 SYNC
2/4 RBF
3/4 HPCD
IC519 CXD1217M
TP7
GND4
ADVANCE SYNC (X)
ADVANCE SYNC (G)
CN1
CN2 D/C SERVO

- DC voltage (3/4) - (TBC 1)

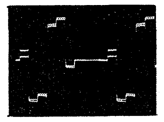
SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC311	15	0.0	IC502	5	12.2	IC506	18	2.6	IC512	1	3.2	IC517	4	5.0
	16	0.0		6	12.2		19	0.0		2	2.6		5	5.1
	17	0.0		7	1.6		20	0.0		3	2.6		6	0.0
	18	0.0		8	12.2	IC507	1	5.2		4	0.0		7	0.0
	19	5.1	IC503	1	0.0		2	2.7		5	2.6		8	4.8
	20	5.1		2	1.6		3	0.0		6	2.2		9	4.8
IC312	1	5.1		3	5.2		4	0.0		7	2.2		10	5.2
	2	0.0		4	1.1		5	0.0		8	5.2		11	0.3
	3	5.1		5	0.0		6	2.4	IC513	1	2.7		12	5.2
	4	0.0		6	0.0		7	0.1		2	0.0		13	5.2
	5	0.0		7	5.2		8	0.0		3	0.0		14	5.2
	6	5.1		8	0.0		9	0.0		4	0.0	IC518	1	0.0
	7	0.0		9	5.2		10	0.0		5	0.0		2	1.2
	8	5.1		10	5.2		11	0.0		6	3.2		3	1.7
IC313	1	5.1		11	5.2		12	0.0		7	2.7		4	5.1
	2	5.1		12	5.2		13	0.0		8	5.2		5	4.6
	3	0.0		13	4.1		14	0.0	IC514	1	1.6		6	2.6
	4	5.1		14	0.0		15	0.0		2	0.2		7	3.0
	5	5.1		15	3.8		16	5.2		3	4.6		8	4.8
IC314	1	5.1		16	5.2	IC508	1	1.4		4	0.0		9	5.0
	2	0.0	IC504	1	0.4		2	5.2		5	2.3		10	0.0
	3	0.0		2	4.2		3	1.2		6	2.3		11	5.0
	4	0.0		3	4.2		4	0.0		7	2.2		12	4.7
	5	5.1		4	5.2		5	1.4		8	5.2		13	3.0
	6	5.1		5	5.2		6	5.2	IC515	1	5.2		14	2.6
	7	0.0		6	1.1		7	1.2		2	0.0		15	4.6
	8	5.1		7	5.2		8	5.2		3	0.0		16	5.1
IC315	1	0.0		8	0.0	IC509	1	5.1		4	0.0		17	1.7
	2	5.0	IC505	1	2.9		2	0.0		5	5.2		18	2.5
	3	5.1		2	2.7		3	0.0		6	5.2		19	0.0
	4	0.0		3	0.0		4	5.2		7	0.0		20	5.2
	5	4.9		4	0.0		5	5.2		8	5.2	IC519	1	5.0
	6	0.1		5	0.0	IC510	1	5.2	IC516	1	0.0		2	5.2
	7	5.0		6	0.0		2	2.6		2	5.2		3	5.0
	8	0.0		7	0.0		3	5.2		3	5.0		4	4.8
	9	5.1		8	0.0		4	5.2		4	4.8		5	2.6
	10	0.0		9	5.2		5	5.2		5	2.4		6	3.9
	11	0.1		10	5.2		6	5.2		6	3.9		7	2.6
	12	5.8		11	0.0		7	5.2		7	2.6		8	4.6
	13	5.1		12	2.9		8	0.0		8	4.6		9	5.2
	14	5.1		13	0.4		9	5.2		9	2.5		10	0.0
	15	0.0		14	2.9		10	5.2		10	2.5		11	0.0
	16	5.1		15	2.9		11	2.6		11	0.0		12	5.1
IC316	1	5.1		16	5.2		12	2.6		12	5.1		13	0.0
	2	0.0	IC506	1	0.0		13	2.6		13	0.0		14	0.0
	3	0.0		2	2.6		14	2.5		14	0.0		15	0.0
	4	0.0		3	0.0		15	0.4		15	0.0		16	0.0
	5	5.8		4	2.6		16	5.2		16	0.0		17	1.7
	6	5.1		5	0.0	IC511	1	0.2		17	1.7		18	0.0
	7	5.1		6	2.6		2	2.6		18	0.0		19	5.2
	8	5.1		7	5.2		3	2.6		19	1.2		20	5.2
IC501	1	5.6		8	2.6		4	0.0		20	0.0		21	5.1
	2	6.1		9	0.9		5	0.0		21	5.1		22	5.1
	3	6.1		10	0.0		6	0.0		22	5.1		23	4.6
	4	0.0		11	0.0		7	0.0		23	0.0		24	0.0
	5	2.6		12	2.6		8	0.0		24	2.2		25	2.5
	6	2.6		13	5.1		9	5.2		25	2.5		26	2.5
	7	2.6		14	2.6		10	5.2		26	2.5		27	2.6
	8	12.2		15	0.0		11	0.0		27	2.6		28	5.2
IC502	1	0.0		16	2.6		12	5.2		28	5.2	IC701	1	1.9
	2	1.0		17	0.0		13	5.2	IC517	1	5.1		2	2.0
	3	2.1					14	5.2		2	0.0		3	1.9
	4	0.0								3	0.2		4	– 1.4

- DC voltage (4/4) - (TBC 1)

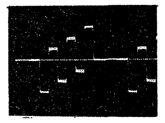
SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC701	5	-1.5	IC706	15	0.8	Q106	B	1.9	Q502	B	2.6	CN1	10A	0.0
	6	1.9		16	0.7		C	-12.1		C	1.0		10 B	0.0
	7	-1.4		17	3.8		E	2.1		E	0.0		11A	12.2
	8	-1.4		18	5.2	Q107	B	6.6	Q701	B	7.1		11 B	0.0
	9	0.0		19	5.2		C	12.2		C	12.2		12AB	12.2
	10	0.0		20	0.4		E	5.9		E	6.5		13A	4.8
	11	0.5		21	0.0	Q108	B	6.5	Q703	B	3.2		13 B	0.0
	12	2.2		22	5.2		C	12.2		C	12.2		14A	1.6
	13	0.1		23	5.2		E	5.9		E	2.6		14B	1.5
	14	0.1		24	5.2	Q109	B	3.1	Q704	B	2.6		15A	0.1
	15	0.8	IC707	1	5.2		C	5.2		C	0.0		15 B	0.1
	16	0.7		2	4.2		E	2.5		E	3.3		16A	1.9
	17	3.9		3	0.2	Q110	B	2.5	Q705	B	2.6		16 B	0.1
	18	5.2		4	0.0		C	-12.1		C	12.2		17 B	5.1
	19	5.2		5	0.2		E	3.1		E	2.0		18A	0.0
	20	0.4		6	5.2	Q111	B	0.4	Q706	B	2.6		18 B	5.0
	21	0.1		7	4.3		C	-12.1		C	0.0		19A	4.9
	22	5.2		8	5.2		E	1.0		E	3.3		19 B	0.2
	23	5.2	IC708	1	0.0	Q112	B	0.9	Q707	B	6.8		20A	5.0
	24	5.2		2	5.0		C	12.2		C	12.2		20 B	4.9
IC702	1	0.0		3	0.0		E	0.3		E	6.2		21A	6.0
	2	1.6		4	0.2	Q113	B	4.2	Q709	B	3.1		21 B	0.0
	3	0.0		5	5.2		C	12.2		C	12.2		22A	4.4
	4	2.7	IC709	1	2.5		E	3.6		E	2.5		22 B	5.0
	5	5.2		2	1.7	Q114	B	4.2	Q710	B	2.5	CN2	1AB	0.0
IC703	1	5.1		3	3.0		C	9.4		C	0.0		2AB	0.0
	2	0.0		4	3.1		E	3.6		E	3.1		3AB	7.9
	3	0.0		5	3.7	Q115	B	9.4	Q711	B	2.5		4AB	14.8
	4	0.0		6	3.1		C	12.2		C	12.2		5AB	-14.9
	5	12.2		7	5.2		E	8.7		E	1.9		6A	0.6
	6	5.1		8	2.5	Q116	B	6.9	Q712	B	2.5		6 B	0.0
	7	6.5		9	1.7		C	12.2		C	0.0		7A	3.1
	8	12.2		10	3.1		E	6.3		E	3.1		7 B	5.1
IC704	1	1.1		11	0.0	Q117	B	1.9	Q713	B	3.0		8A	1.6
	2	1.1		12	1.7		C	1.9		C	11.4		8 B	1.5
	3	1.1		13	0.0		E	1.3		E	2.5		9A	5.2
	4	-12.1		14	4.4	Q118	B	6.3	Q714	B	11.4		9 B	3.7
	5	0.0		15	5.2		C	12.2		C	4.4		10A	3.5
	6	0.0		16	4.3		E	5.7		E	12.0		10 B	0.8
	7	-3.5		17	5.0	Q119	B	1.9	Q715	B	4.4		11A	1.6
	8	12.2		18	2.6		C	5.7		C	12.2		11 B	2.2
IC705	1	2.6		19	0.0		E	1.3		E	3.8		12A	5.2
	2	2.6		20	3.7	Q120	B	6.3	Q716	B	3.1		12 B	0.0
	3	2.6		21	3.1		C	9.1		C	9.5		13A	2.1
	4	0.0		22	3.0		E	5.7		E	2.4		13 B	0.0
	5	2.5		23	1.7	Q121	B	0.0	**CONNECTOR**				14A	5.5
	6	2.5		24	2.5		C	5.7	CN1	1A	1.3		14 B	0.0
	7	2.5	**TRANSISTOR**				E	1.3		1 B	0.0		15A	3.3
	8	12.2	Q101	B	6.6	Q123	B	6.3		2A	2.1		15 B	0.0
IC706	1	1.9		C	12.2		C	12.2		2 B	0.0		16A	3.3
	2	1.9		E	6.0		E	5.7		3A	6.5		16 B	0.0
	3	1.9	Q102	B	2.0	Q124	B	5.7		3 B	0.0		17A	5.2
	4	2.0		C	12.3		C	0.0		4A	4.0		17 B	5.1
	5	2.0		E	1.4		E	6.3		4 B	0.0		18A	5.1
	6	2.0	Q103	B	6.2	Q125	B	5.7		5A	7.2		18 B	0.0
	7	1.9		C	12.3		C	12.2		5 B	0.0		19A	3.8
	8	3.1		E	5.6		E	5.0		6A	12.2		19 B	0.0
	9	0.0	Q104	B	-0.5	Q301	B	P		6 B	12.1		20A	4.9
	10	0.0		C	-12.1		C	P		7A	5.1		20 B	0.0
	11	0.5		E	0.1		E	0.0		7 B	0.0		21A	2.0
	12	2.6	Q105	B	1.9	Q501	B	5.5		8A	0.0		21 B	0.0
	13	0.0		C	12.2		C	1.0		8 B	0.0		22A	1.9
	14	0.0		E	1.2		E	6.1		9A	0.0		22 B	0.0



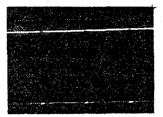
TP1 2.2 Vp-p
TP4 1.0 Vp-p
TP5 1.0 Vp-p



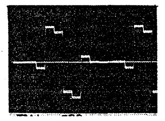
TP2 1.3 Vp-p
TP8 0.2 Vp-p



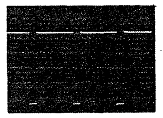
TP3 1.0 Vp-p
TP10 0.15 Vp-p
TP11 0.34 Vp-p



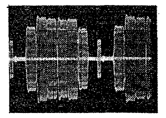
TP6 5.0 Vp-p
TP7 5.2 Vp-p
TP13 5.2 Vp-p
(15.625kHz)



TP9 0.52 Vp-p

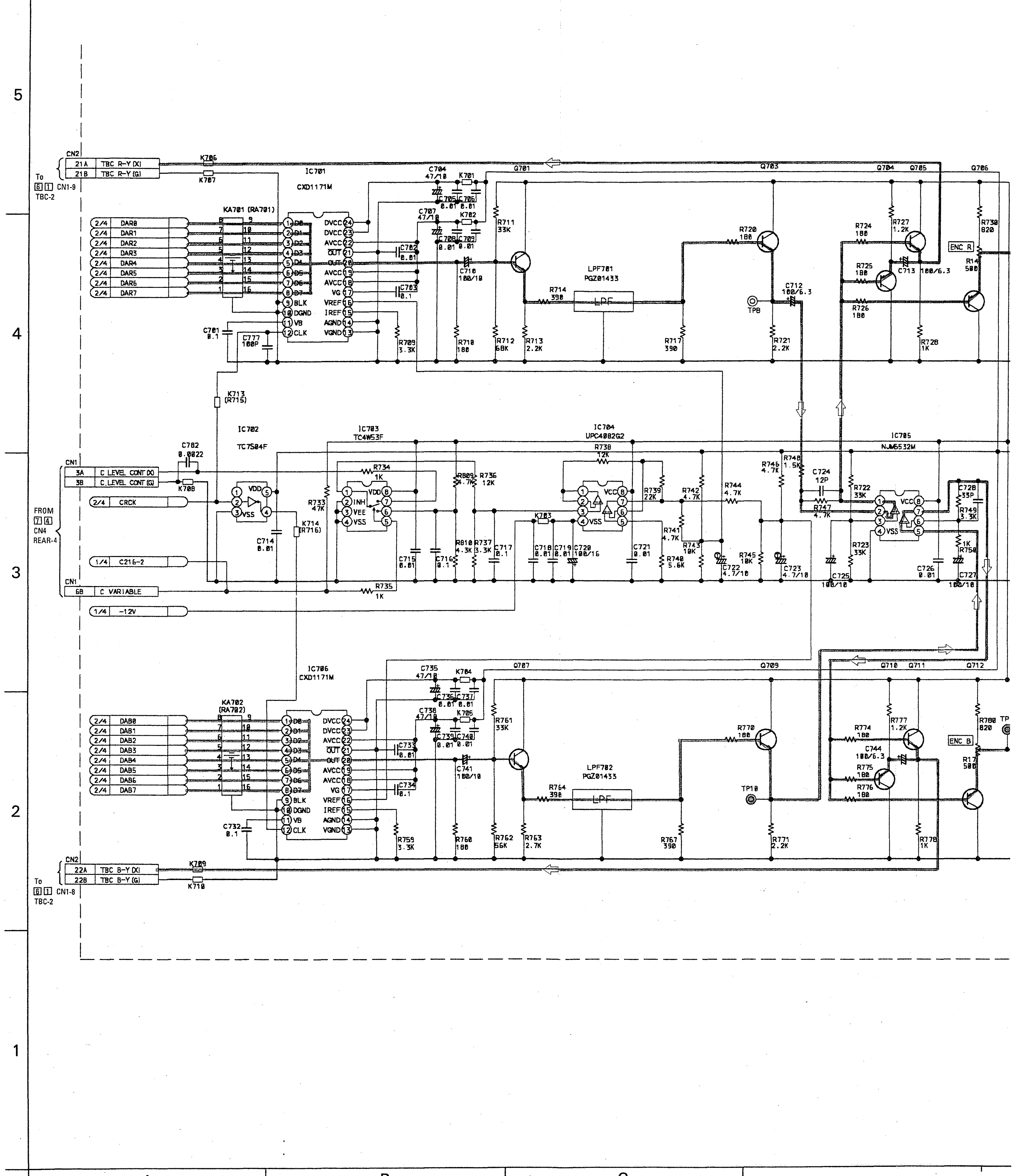


TP12 5.0 Vp-p
(15.625 kHz)

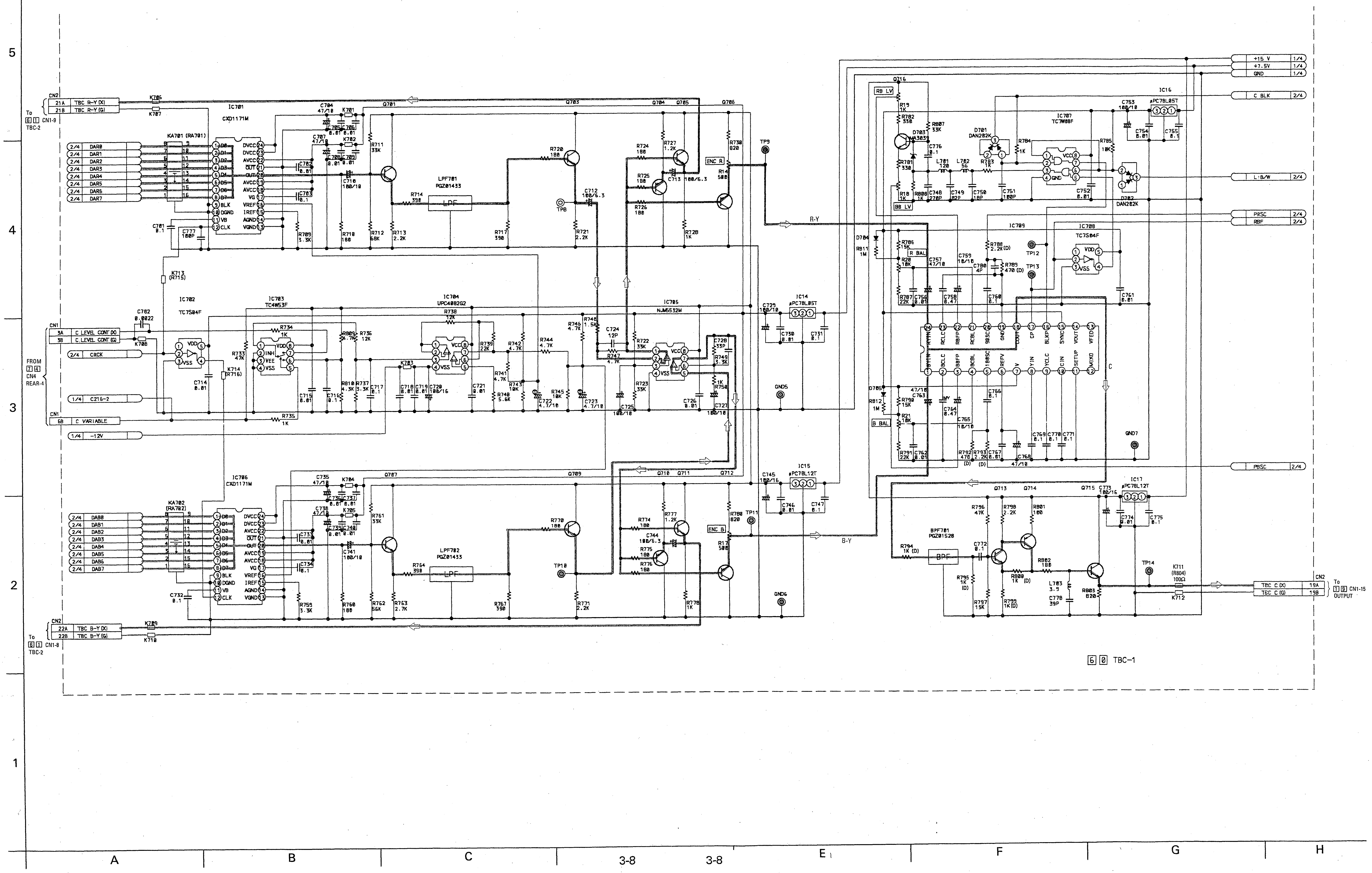


TP14 0.6 Vp-p

— DIAGRAM (4/4) —


6
5
4
3
2
1
A
B
C
CN2
21A TBC R-Y (X)
21B TBC R-Y (G)
To 6 1 CN1-9 TBC-2
K706
K707
IC701
CXD1171M
KA701 (RA701)
2/4 DAR0
2/4 DAR1
2/4 DAR2
2/4 DAR3
2/4 DAR4
2/4 DAR5
2/4 DAR6
2/4 DAR7
D0 D1 D2 D3 D4 D5 D6 D7 BLK DGND VB CLK
DVCC DVCC AVCC OUT OUT AVCC AVCC VG VREF IREF AGND VGND
C701 0.1
C777 100P
C702 0.01
C703 0.1
C704 47/10
K701
C705 0.01
C706 0.01
C707 47/10
K702
C708 0.01
C709 0.01
C710 100/10
R709 3.3K
R710 100
R711 33K
R712 68K
R713 2.2K
R714 390
Q701
LPF701
PGZ01433
LPF
Q703
Q704
Q705
Q706
R720 100
R724 100
R727 1.2K
R725 100
R726 100
C713 100/6.3
C712 100/6.3
R717 390
R721 2.2K
R728 1K
R730 820
R14 580
ENC R
TP8
K713 (R715)
IC702
TC7S04F
C782 0.0022
CN1
3A C LEVEL CONT (X)
3B C.LEVEL CONT (G)
K708
2/4 CRCK
1/4 C216-2
CN1
6B C VARIABLE
1/4 -12V
FROM 7 4 CN4 REAR-4
VDD VSS
C714 0.01
K714 (R716)
IC703
TC4W53F
R734 1K
R733 47K
INH VEE VSS VDD
R735 1K
C715 0.01
C716 0.1
R809 4.7K
R736 12K
R810 4.3K
R737 3.3K
C717 0.1
IC704
UPC4082G2
R738 12K
K703
C718 0.01
C719 0.01
C720 100/16
C721 0.01
R739 22K
R742 4.7K
R741 4.7K
R743 10K
R740 5.6K
R744 4.7K
R745 10K
R746 4.7K
R748 1.5K
C722 4.7/10
C723 4.7/10
C724 12P
R747 4.7K
R722 33K
R723 33K
C725 100/10
IC705
NJM5532M
C728 33P
R749 3.3K
R750 1K
C726 0.01
C727 100/10
IC706
CXD1171M
KA702 (RA702)
2/4 DAB0
2/4 DAB1
2/4 DAB2
2/4 DAB3
2/4 DAB4
2/4 DAB5
2/4 DAB6
2/4 DAB7
C732 0.1
C733 0.01
C734 0.1
C735 47/10
K704
C736 0.01
C737 0.01
C738 47/10
K705
C739 0.01
C740 0.01
C741 100/10
R755 3.3K
R760 100
R761 33K
R762 56K
R763 2.7K
R764 390
Q707
LPF702
PGZ01433
LPF
TP10
R767 390
R770 100
R771 2.2K
Q709
Q710
Q711
Q712
R774 100
R777 1.2K
C744 100/6.3
R775 100
R776 100
R778 1K
R780 820
R17 580
ENC B
TP
CN2
22A TBC B-Y (X)
22B TBC B-Y (G)
K709
K710
To 6 1 CN1-8 TBC-2

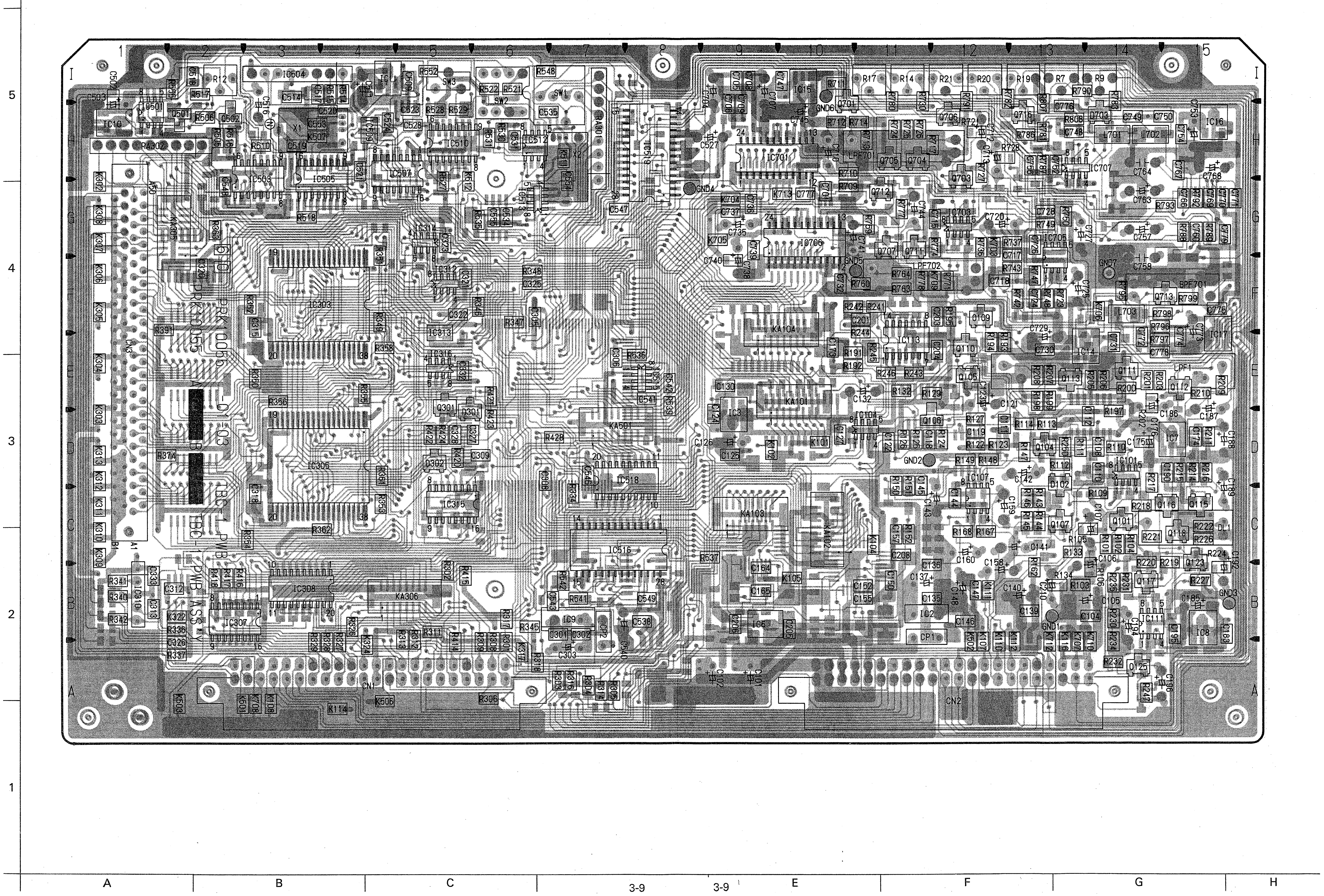
— DIAGRAM (4/4) —



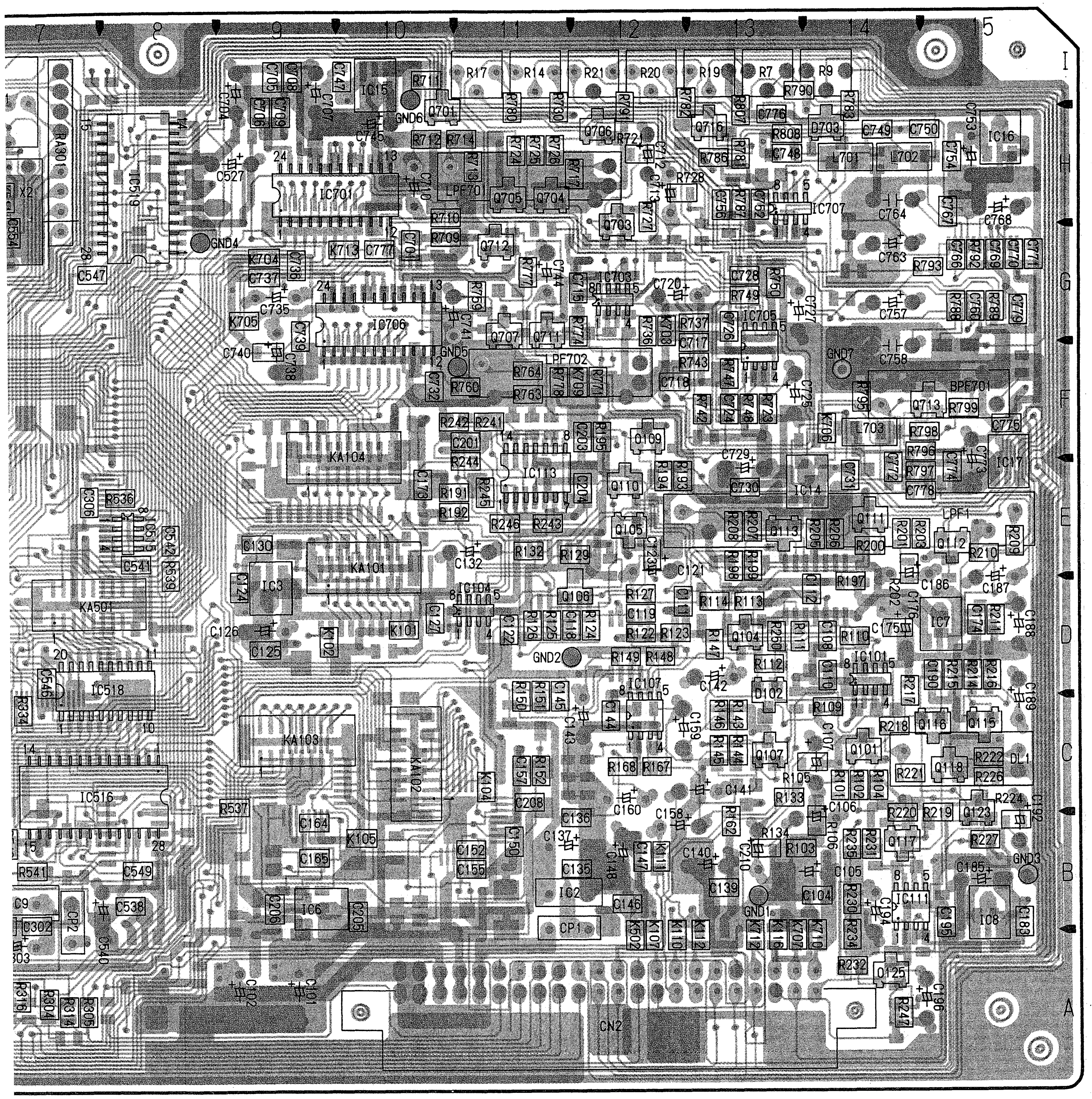
5
4
3
2
1
A
B
C
3-8
3-8
E
F
G
H
CN2
21A TBC R-Y (X)
21B TBC R-Y (G)
To
6 1 CN1-9
TBC-2
K706
K707
IC701
CXD1171M
KA701 (RA701)
2/4 DAR0
2/4 DAR1
2/4 DAR2
2/4 DAR3
2/4 DAR4
2/4 DAR5
2/4 DAR6
2/4 DAR7
D0
D1
D2
D3
D4
D5
D6
D7
BLK
DGND
VB
CLK
DVCC
AVCC
OUT
VG
VREF
IREF
AGND
VGND
C701 0.1
C777 100P
C782 0.01
C783 0.1
C704 47/10
K701
C705 0.01
C706 0.01
C707 47/10
K702
C708 0.01
C709 0.01
C710 100/10
Q701
R709 3.3K
R710 100
R711 33K
R712 68K
R713 2.2K
R714 390
LPF701
PGZ01433
LPF
Q703
R720 100
R717 390
C712 100/6.3
TP8
R721 2.2K
Q704
Q705
R724 100
R727 1.2K
R725 100
C713 100/6.3
R726 100
R728 1K
Q706
R730 820
ENC R
R14 500
TP9
R-Y
K713 (R715)
IC702
TC7S04F
C702 0.0022
CN1
3A C LEVEL CONT (X)
3B C LEVEL CONT (G)
K708
2/4 CRCK
FROM
7 6
CN4
REAR-4
1/4 C216-2
6B C VARIABLE
1/4 -12V
VDD
VSS
C714 0.01
R753 47K
K714 (R716)
R735 1K
IC703
TC4W53F
R734 1K
INH
VEE
C715 0.01
C716 0.1
R809 4.7K
R810 4.3K
R736 12K
R737 3.3K
C717 0.1
IC704
UPC4082G2
R738 12K
K703
VCC
C718 0.01
C719 0.01
C720 100/16
R739 22K
C721 0.01
R742 4.7K
R741 4.7K
R740 5.6K
R743 10K
R744 4.7K
C722 4.7/10
R745 10K
R746 4.7K
R748 1.5K
C723 4.7/10
C724 12P
R747 4.7K
IC705
NJM6532M
R722 33K
R723 33K
C725 100/10
C728 33P
R749 3.3K
R750 1K
C726 0.01
C727 100/10
C729 100/10
IC14
µPC78L05T
C730 0.01
C731 0.1
GND5
IC706
CXD1171M
KA702 (RA702)
2/4 DAB0
2/4 DAB1
2/4 DAB2
2/4 DAB3
2/4 DAB4
2/4 DAB5
2/4 DAB6
2/4 DAB7
C732 0.1
C733 0.01
C734 0.1
C735 47/10
K704
C736 0.01
C737 0.01
C738 47/10
K705
C739 0.01
C740 0.01
C741 100/10
Q707
R759 3.3K
R760 100
R761 33K
R762 56K
R763 2.7K
R764 390
LPF702
PGZ01433
Q709
R770 100
R767 390
TP10
R771 2.2K
Q710
Q711
Q712
R774 100
R777 1.2K
C744 100/6.3
R775 100
R776 100
R778 1K
R780 820
ENC B
TP11
R17 500
C745 100/16
IC15
µPC78L12T
C746 0.01
C747 0.1
GND6
B-Y
CN2
22A TBC B-Y (X)
22B TBC B-Y (G)
K709
K710
To
6 1 CN1-8
TBC-2
+15 V 1/4
+7.5V 1/4
GND 1/4
C BLK 2/4
Q716
RB LV
R19 1K
R782 330
R807 33K
D703 MA3039
C776 0.1
R781 330
R18 1K
R808 1K
BB LV
C748 270P
L701 120
L702 56
C749 82P
C750 18P
D701 DAN202K
R783 1K
R784 1K
C751 100P
IC707
TC7W08F
R785 10K
C752 0.01
D702 DAN202K
C753 100/10
IC16
µPC78L05T
C754 0.01
C755 0.1
LIB/W 2/4
PRSC 2/4
RBF 2/4
D704
R811 1M
R786 15K
R BAL
R20 10K
C757 47/10
R787 22K
C756 0.01
C758 0.47
C759 10/10
C780 4P
R788 2.2K (D)
R789 470 (D)
C760 0.1
IC709
TP12
TP13
IC708
TC7S04F
C761 0.01
RYIN
RCLC
RBFP
RCBL
90SC
GND
COUT
CP
BLKP
SYNC
VOUT
VFED
BYIN
BCLC
BBFP
BCBL
180SC
REFV
V
YIN
YCLC
CIN
SETUP
MIXD
C
D705
R812 1M
R790 15K
47/10
C763
C764 0.47
B BAL
R21 10K
R791 22K
C762 0.01
C765 10/10
C766 0.1
R792 470 (D)
R793 2.2K (D)
C767 0.01
C768 47/10
C769 0.1
C770 0.1
C771 0.1
GND7
PBSC 2/4
Q713
Q714
Q715
C773 100/16
IC17
µPC78L12T
C774 0.01
C775 0.1
R796 47K
R798 2.2K
R801 100
R794 1K (D)
BPF701
PGZ01528
BPF
C772 0.1
R795 1K (D)
R797 15K
R800 1K (D)
R802 100
R799 1K (D)
L703 3.9
C778 39P
R803 820
TP14
K711 (R804) 100Ω
K712
CN2
TBC C (X) 19A
TBC C (G) 19B
To
1 8 CN1-15
OUTPUT
6 0 TBC-1

3.5 TBC-1 CIRCUIT BOARD

— Rear —

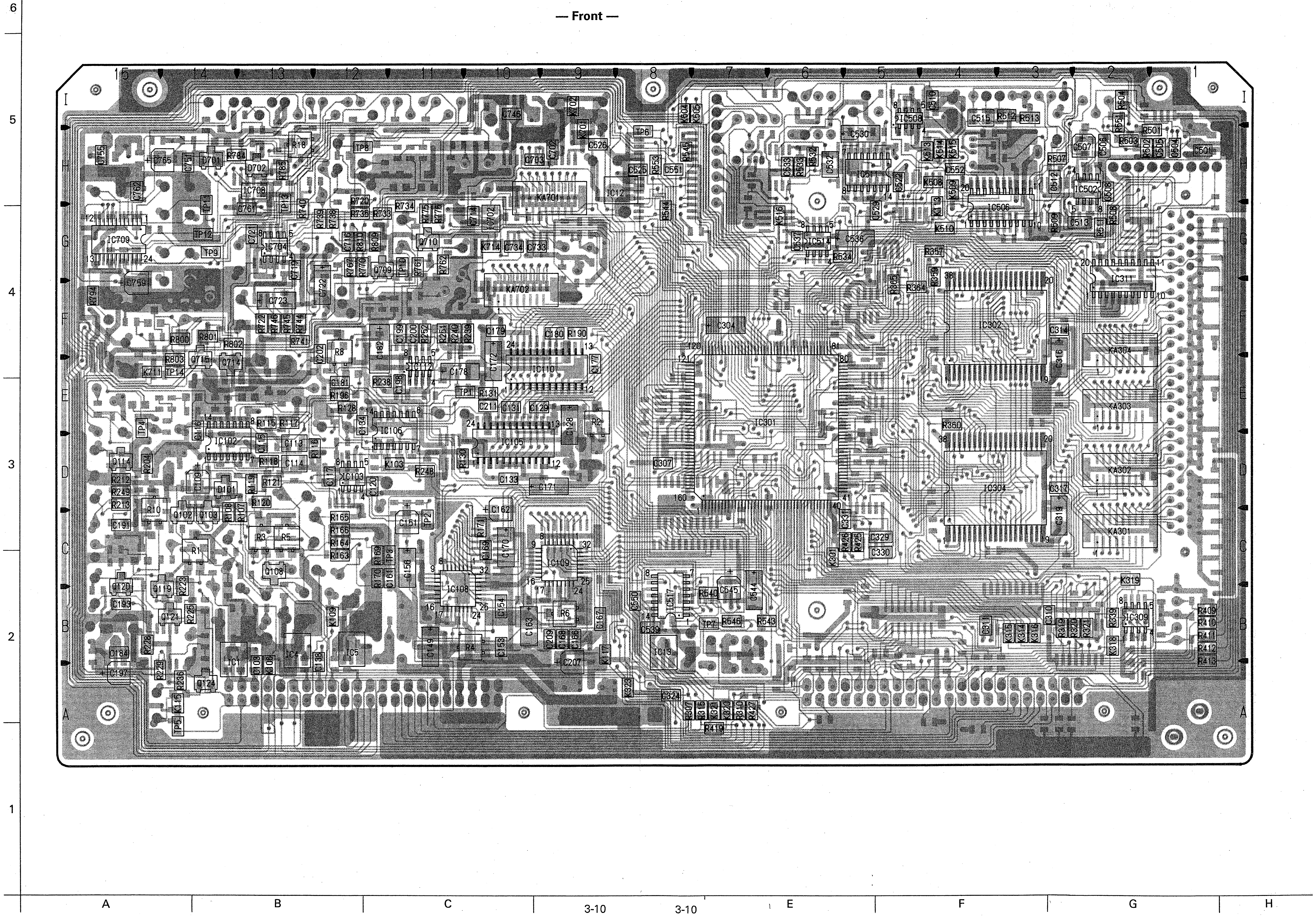


6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
IC10
IC504
IC505
IC503
IC507
IC509
IC510
IC512
IC519
IC15
IC701
IC706
IC703
IC705
IC707
IC16
IC17
IC14
IC303
IC305
IC312
IC313
IC314
IC315
IC316
IC307
IC308
IC310
IC9
IC515
IC516
IC518
IC3
IC104
IC113
IC101
IC107
IC111
IC7
IC8
IC2
IC6
KA104
KA101
KA103
KA102
KA501
KA306
LPF701
LPF702
LPF1
BPF701
L701
L702
L703
X1
X2
SW1
SW2
SW3
CN1
CN2
CN3
CP1
GND1
GND2
GND3
GND4
GND5
GND6
GND7
DL1
PRK10055
TBC-1 PWB
TBC-1 PWB ASSY


7
8
9
10
11
12
13
14
15
I
H
G
F
E
D
C
B
A
IC701
IC706
IC707
IC703
IC705
IC15
IC16
IC17
IC14
IC113
IC104
IC107
IC101
IC111
IC518
IC516
IC519
IC3
IC6
IC7
IC2
IC8
KA104
KA101
KA501
KA103
KA102
LPF701
LPF702
BPF701
LPF1
L701
L702
L703
GND1
GND2
GND3
GND4
GND5
GND6
GND7
CN2
CP1
CP2
DL1
RA301
X2

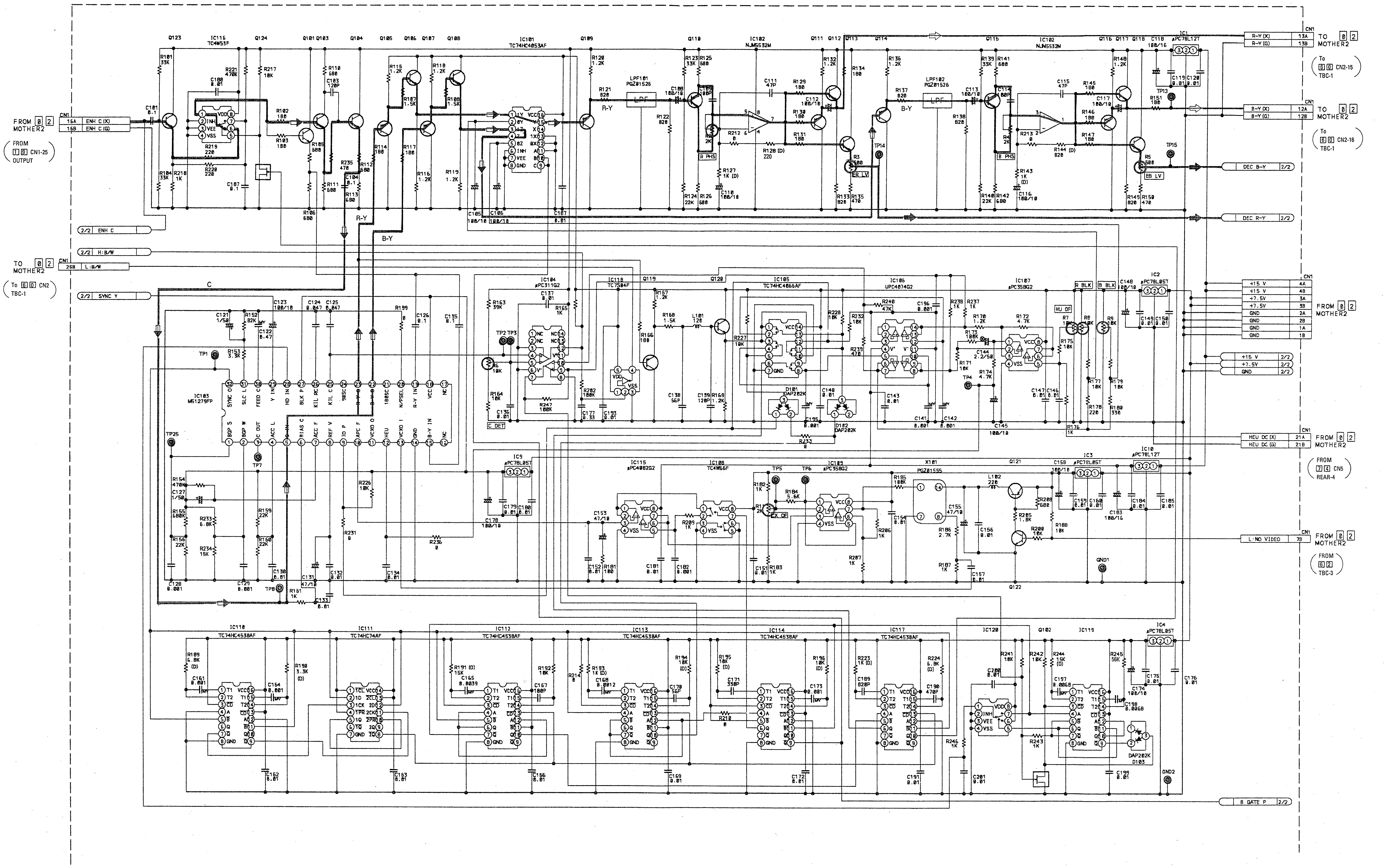
— TBC-1 <60> DC voltage (2/2) —

SYMBOL	No.	PB
IC507	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	0.0
	16	5.1
IC508	1	2.6
	2	5.1
	3	2.8
	4	0.0
	5	2.6
	6	5.1
	7	2.8
	8	5.1
IC509	1	.
	2	.
	3	.
	4	.
	5	.
IC510	1	5.1
	2	2.6
	3	5.1
	4	5.1
	5	5.1
	6	5.1
	7	5.1
	8	0.0
	9	5.1
	10	0.0
	11	0.0
	12	0.0
	13	2.6
	14	2.6
	15	0.4
	16	5.1
IC511	1	0.0
	2	2.6
	3	2.6
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	5.1
	10	5.1
	11	0.0
	12	5.1
	13	5.1
	14	5.1
IC512	1	1.1
	2	1.7
	3	1.7
	4	0.0
	5	2.6
	6	2.1
	7	2.1
	8	5.1
IC513	1	3.0
	2	0.0
	3	0.0
	4	0.0
	5	0.1
	6	1.1
	7	3.1
	8	5.1
IC514	1	2.2
	2	5.1
	3	0.5
	4	0.0
	5	2.3
	6	2.4
	7	1.7
	8	5.1
IC515	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	5.1
	6	5.1
	7	0.0
IC515	8	5.1
IC516	1	0.0
	2	5.0
	3	4.8
	4	4.6
	5	4.6
	6	3.9
	7	2.6
	8	4.5
	9	2.2
	10	2.5
	11	0.0
	12	4.9
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	1.7
	18	0.0
	19	2.5
	20	0.0
	21	0.0
	22	0.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	2.6
	28	5.1
IC517	1	0.0
	2	0.0
	3	0.0
	4	4.9
	5	1.1
	6	0.0
	7	0.0
	8	4.6
	9	4.5
	10	5.1
	11	0.0
	12	5.1
	13	5.1
	14	5.1
IC518	1	0.0
	2	4.9
	3	4.6
	4	4.6
	5	2.5
	6	4.5
	7	4.9
	8	1.6
	9	2.5
	10	0.0
	11	2.6
	12	1.6
	13	4.9
	14	4.5
	15	2.5
	16	0.2
	17	4.6
	18	0.0
	19	0.0
	20	0.0
IC519	1	5.1
	2	5.1
	3	4.9
	4	4.6
	5	4.6
	6	3.9
	7	2.6
	8	4.5
	9	5.1
	10	0.0
	11	0.1
	12	4.9
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	1.6
	18	0.0
	19	0.0
	20	5.1
	21	0.0
	22	0.0
	23	4.5
IC519	24	0.0
	25	2.5
	26	2.5
	27	2.5
	28	5.1
IC701	1	0.0
	2	2.0
	3	0.0
	4	1.8
	5	2.1
	6	1.5
	7	1.8
	8	3.5
	9	0.0
	10	0.0
	11	0.5
	12	2.3
	13	0.0
	14	0.0
	15	1.2
	16	1.2
	17	3.6
	18	5.1
	19	5.1
	20	0.6
	21	0.0
	22	5.1
	23	5.1
	24	5.1
IC702	1	0.2
	2	2.3
	3	0.0
	4	2.8
	5	5.1
IC703	1	5.1
	2	0.0
	3	0.0
	4	0.0
	5	11.8
	6	0.0
	7	2.6
	8	11.8
IC704	1	1.3
	2	1.3
	3	1.3
	4	-11.9
	5	0.0
	6	0.0
	7	-2.2
	8	0.0
IC705	1	5.9
	2	5.9
	3	
	4	0.0
	5	5.9
	6	5.9
	7	5.9
	8	11.8
IC706	1	0.0
	2	2.0
	3	0.0
	4	1.8
	5	2.1
	6	1.5
	7	1.8
	8	3.5
	9	0.0
	10	0.0
	11	0.5
	12	2.3
	13	0.0
	14	0.0
	15	1.2
	16	1.2
	17	3.6
	18	5.1
	19	5.1
	20	0.6
	21	0.0
	22	5.1
	23	5.1
	24	5.1
IC707	1	5.1
	2	4.0
	3	0.3
	4	0.0
	5	0.3
	6	5.1
	7	4.0
	8	5.1
IC708	1	0.3
	2	4.9
	3	0.0
	4	0.3
	5	5.1
IC709	1	2.4
	2	1.8
	3	2.9
	4	3.0
	5	3.6
	6	3.0
	7	5.0
	8	2.3
	9	1.7
	10	3.0
	11	0.0
	12	1.6
	13	0.3
	14	4.2
	15	5.0
	16	4.1
	17	4.9
	18	3.2
	19	0.0
	20	3.6
	21	3.0
	22	2.9
	23	1.7
	24	2.3
TRANSISTOR		
Q101	B	6.6
	C	12.4
	E	6.0
Q102	B	2.0
	C	12.4
	E	1.4
Q103	B	6.3
	C	12.4
	E	5.7
Q104	B	0.0
	C	-11.9
	E	0.1
Q105	B	0.0
	C	0.0
	E	0.0
Q106	B	1.8
	C	-11.9
	E	2.4
Q107	B	6.4
	C	12.1
	E	5.8
Q108	B	2.4
	C	5.1
	E	1.8
Q109	B	.
	C	.
	E	.
Q110	B	1.8
	C	-12.0
	E	2.4
Q111	B	0.4
	C	-11.9
	E	1.0
Q112	B	.
	C	.
	E	.
Q113	B	4.2
	C	12.0
	E	3.6
Q114	B	4.2
	C	0.0
	E	3.6
Q115	B	9.2
	C	12.0
	E	8.5
Q116	B	.
	C	.
	E	.
Q117	B	1.9
	C	1.9
	E	1.3
Q118	B	6.2
	C	0.0
	E	5.5
Q119	B	1.9
	C	0.0
	E	1.3
Q120	B	6.2
	C	0.0
	E	5.5
Q121	B	1.9
	C	5.5
	E	1.3
Q123	B	6.2
	C	12.0
	E	5.5
Q124	B	5.5
	C	0.0
	E	6.2
Q125	B	5.5
	C	12.0
	E	4.9
Q501	B	5.4
	C	1.3
	E	6.0
Q502	B	2.6
	C	1.3
	E	0.0
Q503	B	5.7
	C	7.4
	E	7.5
Q504	B	.
	C	.
	E	.
Q701	B	4.2
	C	11.8
	E	3.6
Q702	B	4.2
	C	9.1
	E	3.6
Q703	B	9.0
	C	11.8
	E	8.4
Q704	B	5.9
	C	0.0
	E	6.6
Q705	B	5.9
	C	11.8
	E	5.3
Q706	B	5.9
	C	0.0
	E	6.6
Q707	B	4.2
	C	11.8
	E	3.6
Q708	B	4.2
	C	9.0
	E	3.6
Q709	B	8.9
	C	11.8
	E	8.3
Q710	B	5.9
	C	0.0
	E	6.5
Q711	B	5.9
	C	11.8
	E	5.3
Q712	B	5.9
	C	0.0
	E	6.5
Q713	B	5.9
	C	10.8
	E	5.4
Q714	B	10.8
	C	10.1
	E	11.4
Q715	B	10.0
	C	0.0
	E	9.4
Q716	B	.
	C	.
	E	.
CONNECTOR		
CN1	4A	4.9
	4B	0.0
	11A	12.4
	16B	0.3
	5A	9.7
	5B	0.0
	6A	11.9
	12AB	12.0
	2A	2.4
	2B	0.0
	1A	0.1
	1B	0.0
	13A	4.6
	13B	0.0
	3A	2.6
	3B	0.0
	6B	11.8
CN2	4AB	15.2
	2AB	0.0
	3AB	7.5
	14A	5.5
	14B	0.0
	5AB	-15.1
	1AB	0.0
	15A	3.3
	15B	0.0
	16A	3.3
	16B	0.0
	20A	4.8
	20B	0.0
	12A	5.1
	12B	0.0
	10B	0.1
CN2	11A	2.6
	11B	1.2
	17B	5.1
	7B	1.1
	21A	5.3
	21B	0.0
	22A	5.3
	22B	0.0
	19A	9.4
	19B	0.0

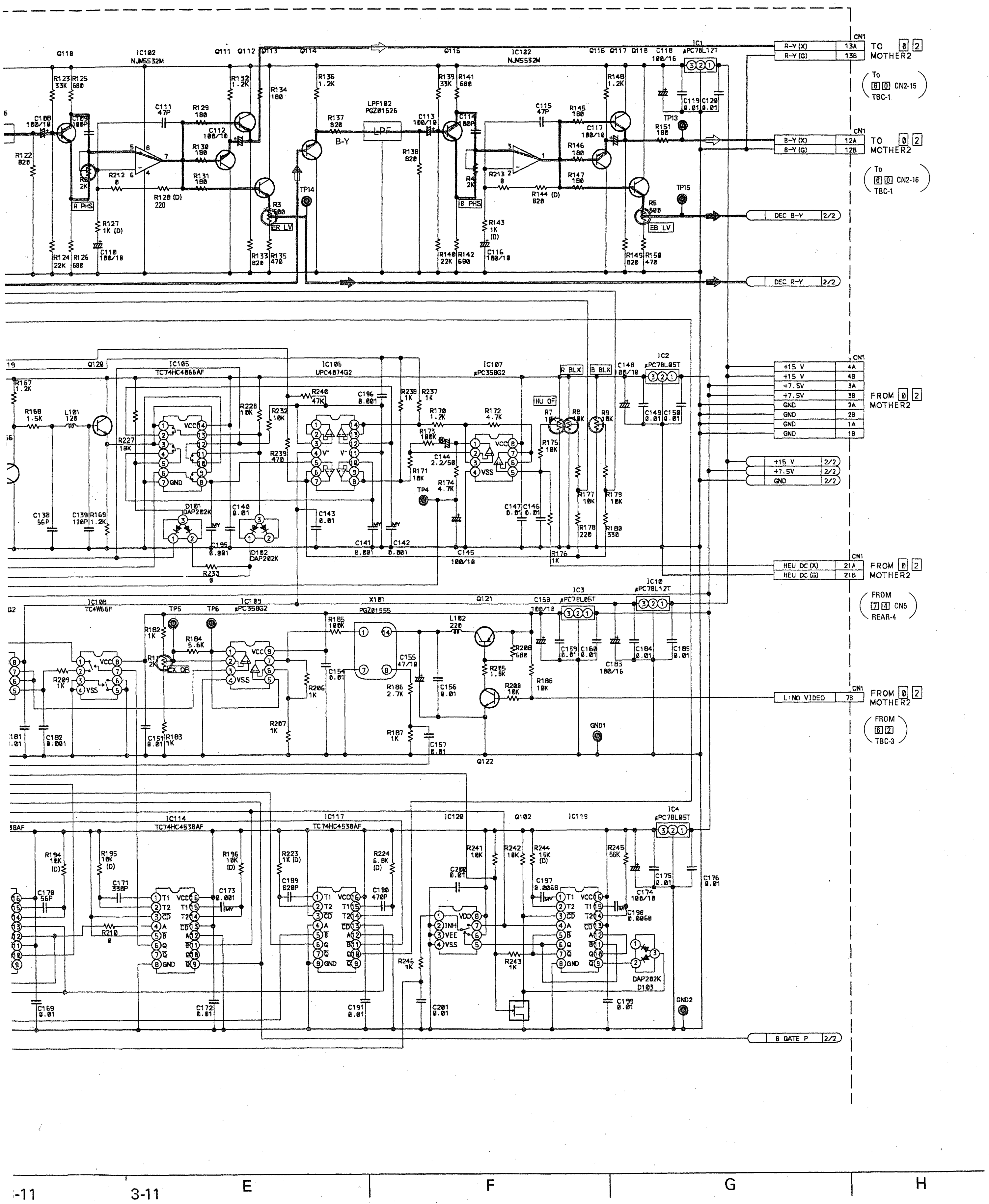

— Front —
1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
IC301
IC302
IC304
IC311
IC309
IC501
IC502
IC506
IC508
IC514
IC517
IC12
IC13
IC1
IC4
IC5
IC102
IC103
IC105
IC106
IC108
IC109
IC110
IC112
IC702
IC704
IC708
IC709
KA301
KA302
KA303
KA304
KA701
KA702
TP1
TP2
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14

3.6 TBC-2 SCHEMATIC DIAGRAM

— DIAGRAM (1/2) —



6
5
4
3
2
1
A
B
C
D
E
F
G
H
FROM 8 2 MOTHER2
FROM 1 8 CN1-25 OUTPUT
CN1 16A ENH C (X)
16B ENH C (G)
TO 8 2 MOTHER2
To 6 0 CN2 TBC-1
2/2 ENH C
2/2 H:B/W
26B L:B/W
2/2 SYNC Y
IC116 TC4W53F
IC101 TC74HC4053AF
IC102 NJM5532M
LPF101 PGZ01526
LPF102 PGZ01526
IC1 μPC78L12T
R-Y (X) 13A
R-Y (G) 13B
TO 8 2 MOTHER2
To 6 0 CN2-15 TBC-1
B-Y (X) 12A
B-Y (G) 12B
TO 8 2 MOTHER2
To 6 0 CN2-16 TBC-1
DEC B-Y 2/2
DEC R-Y 2/2
R-Y
B-Y
R PHS
B PHS
ER LV
EB LV
TP14
TP15
IC103 M51279FP
IC104 μPC311G2
IC118 TC7S04F
IC105 TC74HC4066AF
IC106 UPC4074G2
IC107 μPC358G2
IC2 μPC78L05T
R BLK
B BLK
HU OF
C DET
D101 DAP202K
D102 DAP202K
+15 V 4A
+15 V 4B
+7.5V 3A
+7.5V 3B
GND 2A
GND 2B
GND 1A
GND 1B
FROM 8 2 MOTHER2
+15 V 2/2
+7.5V 2/2
GND 2/2
HEU DC (X) 21A
HEU DC (G) 21B
FROM 8 2 MOTHER2
FROM 7 4 CN5 REAR-4
IC9 μPC78L05T
IC115 μPC4082G2
IC108 TC4W66F
IC109 μPC358G2
X101 PGZ01555
IC3 μPC78L05T
IC10 μPC78L12T
CX OF
L:NO VIDEO 7B
FROM 8 2 MOTHER2
FROM 6 2 TBC-3
GND1
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP25
IC110 TC74HC4538AF
IC111 TC74HC74AF
IC112 TC74HC4538AF
IC113 TC74HC4538AF
IC114 TC74HC4538AF
IC117 TC74HC4538AF
IC120
Q102
IC119
IC4 μPC78L05T
DAP202K D103
GND2
B GATE P 2/2

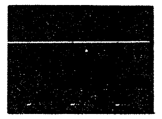

IC102 NJM5532M
Q110
Q111 Q112 Q113 Q114
Q115
Q116 Q117 Q118
IC1 μPC78L12T
R-Y (X)
R-Y (G)
B-Y (X)
B-Y (G)
TO 8 2 MOTHER2
To 8 8 CN2-15 TBC-1
To 8 8 CN2-16 TBC-1
LPF102 PGZ01526
LPF
B-Y
R PHS
B PHS
ER LV
EB LV
TP13
TP14
TP15
DEC B-Y 2/2
DEC R-Y 2/2
IC105 TC74HC4066AF
IC106 UPC4074G2
IC107 μPC358G2
IC2 μPC78L05T
R BLK
B BLK
HU OF
+15 V
+7.5V
GND
FROM 8 2 MOTHER2
D101 DAP202K
D102 DAP202K
TP4
HEU DC (X)
HEU DC (G)
FROM 7 4 CN5 REAR-4
IC108 TC4W66F
IC109 μPC358G2
X101 PGZ01555
Q121
Q122
IC3 μPC78L05T
IC10 μPC78L12T
TP5
TP6
CX DE
L:NO VIDEO
FROM 8 2 MOTHER2
FROM 8 2 TBC-3
GND1
IC114 TC74HC4538AF
IC117 TC74HC4538AF
IC120
Q102
IC119
IC4 μPC78L05T
DAP202K D103
GND2
B GATE P 2/2
E
F
G
H

- DC voltage (1/2) - (TBC 2)

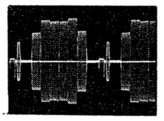
SYMBOL No.		PB
INTEGRATED CIRCUIT		
IC 1	1	14.7
	2	0.0
	3	12.2
IC 2	1	7.9
	2	0.0
	3	5.1
IC 3	1	7.9
	2	0.0
	3	5.1
IC 4	1	7.9
	2	0.0
	3	5.1
IC 5	1	14.7
	2	0.0
	3	12.3
IC 6	1	7.9
	2	0.0
	3	5.1
IC 7	1	14.7
	2	0.0
	3	12.1
IC 8	1	14.7
	2	0.0
	3	12.1
IC 9	1	7.9
	2	0.0
	3	5.1
IC 10	1	14.7
	2	0.0
	3	12.1
IC 11	1	14.7
	2	0.0
	3	12.2
IC101	1	2.2
	2	2.2
	3	2.2
	4	2.2
	5	2.2
	6	0.0
	7	0.0
	8	0.0
	9	4.4
	10	4.4
	11	0.0
	12	0.0
	13	0.0
	14	0.0
	15	2.2
	16	5.1
IC102	1	0.0
	2	0.0
	3	3.9
	4	0.0
	5	3.9
	6	3.9
	7	3.9
	8	12.2
IC103	1	2.9
	2	3.6
	3	0.4
	4	2.6
	5	3.0
	6	3.0
	7	4.3
	8	3.1
	9	1.2
	10	3.1
	11	2.7
	12	2.6
	13	3.4
	14	0.0
	15	3.0
	16	0.0
	17	0.3
	18	5.1
	19	3.0
	20	0.0
	21	4.3
	22	2.2
	23	2.2
	24	4.3
	25	2.1
	26	2.8
	27	5.1
	28	1.8
	29	3.0
	30	3.0
	31	0.5
	32	4.2
IC104	1	0.0
	2	0.0
	3	0.0
	4	2.1
	5	2.1
	6	0.0
	7	5.1
	8	0.0
	9	2.4
	10	2.1
	11	12.2
	12	0.3
	13	0.0
	14	0.0
IC105	1	2.2
	2	2.3
	3	2.2
	4	0.4
	5	0.6
	6	0.1
	7	0.0
	8	0.4
	9	2.2
	10	0.5
	11	0.6
	12	1.2
	13	0.6
	14	5.1
IC106	1	0.0
	2	11.6
	3	0.0
	4	12.1
	5	2.2
	6	2.2
	7	2.2
	8	2.3
	9	2.3
	10	2.3
	11	0.0
	12	2.3
	13	2.3
	14	2.3
IC107	1	2.6
	2	2.3
	3	2.3
	4	0.0
	5	2.4
	6	2.4
	7	2.4
	8	5.1
IC108	1	3.1
	2	3.1
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.3
	8	5.1
IC109	1	1.6
	2	3.1
	3	3.1
	4	0.0
	5	1.6
	6	1.6
	7	3.1
	8	5.1
IC110	1	0.0
	2	4.6
	3	5.1
	4	0.0
	5	4.3
	6	0.5
	7	4.6
	8	0.0
	9	4.9
	10	0.2
	11	4.3
	12	0.0
	13	5.1
	14	4.9
	15	0.0
	16	5.1
IC111	1	0.0
	2	4.3
	3	4.6
	4	5.1
	5	5.1
	6	0.0
	7	0.0
IC111	8	5.0
	9	0.1
	10	5.1
	11	4.9
	12	4.3
	13	0.0
	14	5.1
IC112	1	0.0
	2	3.0
	3	5.1
	4	3.4
	5	4.3
	6	3.4
	7	1.8
	8	0.0
	9	5.0
	10	0.1
	11	5.1
	12	3.4
	13	5.0
	14	4.8
	15	0.0
	16	5.1
IC113	1	0.0
	2	5.0
	3	0.0
	4	4.3
	5	5.0
	6	0.1
	7	5.0
	8	0.0
	9	5.1
	10	0.1
	11	5.1
	12	5.0
	13	5.0
	14	4.8
	15	0.0
	16	5.1
IC114	1	0.0
	2	4.6
	3	5.1
	4	5.0
	5	5.1
	6	0.3
	7	4.8
	8	0.0
	9	4.4
	10	0.7
	11	1.8
	12	0.0
	13	5.1
	14	4.3
	15	0.0
	16	5.1
IC115	1	0.0
	2	0.0
	3	3.1
	4	0.0
	5	0.0
	6	3.2
	7	3.2
	8	12.1
IC116	1	5.2
	2	0.0
	3	0.0
	4	0.0
	5	11.0
	6	5.2
	7	5.2
	8	12.2
IC117	1	0.0
	2	5.1
	3	5.1
	4	0.0
	5	0.1
	6	0.1
	7	5.1
	8	0.0
	9	4.9
	10	0.0
	11	0.0
	12	0.0
	13	5.0
	14	4.8
	15	0.0
	16	5.1
IC118	1	0.0
	2	0.3
	3	0.0
	4	5.1
	5	5.1
IC119	1	0.0
	2	5.1
	3	0.0
	4	1.8
	5	5.1
	6	0.0
	7	5.1
	8	0.0
	9	0.0
	10	0.0
	11	0.0
	12	0.0
	13	5.1
	14	5.1
	15	0.0
	16	5.1
IC120	1	1.8
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	5.1
	7	1.8
	8	5.1
IC301	1	0.5
	2	6.1
	3	6.1
	4	0.0
	5	0.0
	6	6.1
	7	12.3
	8	0.5

– DC voltage (2/2) – (TBC 2)

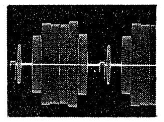
SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC302	1	5.1	IC309	1	5.1	Q109	B	2.2	Q306	B	6.1	Q327	G	4.4
	2	4.2		2	4.2		C	0.0		C	0.0		D	0.0
	3	2.6		3	0.0		E	2.8		E	6.8		S	0.0
	4	2.7		4	2.7	Q110	B	4.5	Q307	B	7.8	Q328	B	3.9
	5	P		5	0.0		C	8.4		C	12.3		C	8.8
	6	2.7		6	2.7		E	3.9		E	7.2		E	3.3
	7	0.0		7	0.0	Q111	B	3.9	Q308	B	2.7	Q329	B	8.8
	8	2.7		8	2.7		C	0.0		C	5.1		C	12.2
IC303	1	5.1	IC310	1	5.1		E	4.5		E	2.1		E	8.2
	2	3.7		2	3.7	Q112	B	3.9	Q309	B	2.7	Q330	B	3.9
	3	2.6		3	2.6		C	12.2		C	5.1		C	9.0
	4	2.7		4	2.7		E	3.2		E	2.1		E	3.3
	5	0.0		5	0.0	Q113	B	3.9	Q310	B	6.7	Q331	B	3.3
	6	2.7		6	2.7		C	12.2		C	0.0		C	9.6
	7	0.0		7	0.0		E	3.2		E	7.4		E	2.6
	8	2.7		8	2.7	Q114	B	2.2	Q311	B	6.7	Q332	B	5.9
IC304	1	0.6	IC311	1	10.1		C	0.0		C	12.3		C	12.2
	2	6.1		2	6.1		E	2.8		E	6.0		E	5.3
	3	6.1		3	4.2	Q115	B	4.5	Q312	B	5.7	Q333	B	0.6
	4	0.0		4	0.0		C	8.4		C	9.6		C	12.2
	5	0.0		5	4.1		E	3.9		E	5.0		E	4.5
	6	6.7		6	6.1	Q116	B	3.9	Q313	B	4.5	**CONNECTOR**		
	7	12.3		7	6.1		C	0.0		C	8.3	CN1	1AB	0.0
	8	0.5		8	12.2		E	4.5		E	3.9		2AB	0.0
IC305	1	6.8	IC312	1	0.7	Q117	B	12.2	Q314	B	2.7		3AB	7.9
	2	6.1		2	0.7		C	3.2		C	5.1		4AB	14.7
	3	6.1		3	0.0		E	3.9		E	2.0		5 B	0.0
	4	0.0		4	1.6	Q118	B	3.9	Q315	B	2.7		6 B	0.0
	5	3.9		5	4.6		C	12.2		C	5.1		7 B	5.1
	6	3.9		6	0.0		E	3.2		E	2.0		8A	1.8
	7	3.9		7	0.4	Q119	B	2.2	Q316	B	6.8		8 B	0.0
	8	12.1		8	0.0		C	0.0		C	0.0		9A	2.0
IC306	1	5.1K		9	5.3		E	2.8		E	7.4		9 B	0.0
	2	4.2		10	5.3	Q120	B	2.8	Q317	B	6.7		10A	4.9
	3	2.6		11	12.2		C	5.1		C	12.1		10 B	0.0
	4	2.7		12	0.8		E	2.2		E	6.1		12A	3.2
	5	0.0		13	0.7	Q121	B	4.4	Q318	B	6.6		12 B	0.0
	6	2.7		14	0.7		C	5.1		C	12.1		13A	3.2
	7	0.0	**TRANSISTOR**				E	5.1		E	5.9		13 B	0.0
	8	2.7	Q101	B	5.2	Q122	B	0.7	Q319	B	4.5		14A	5.4
IC307	1	5.1		C	12.2		C	0.0		C	8.4		14 B	0.0
	2	3.7		E	4.6		E	0.0		E	3.8		16A	6.9
	3	2.6	Q102	G	5.1	Q123	B	5.8	Q320	B	2.7		16 B	0.0
	4	2.7		D	0.0		C	12.2		C	5.1		20A	3.4
	5	0.0		S	0.0		E	5.2		E	2.1		20 B	0.0
	6	2.7	Q103	B	5.2	Q124	G	0.3	Q321	B	2.7		21A	2.4
	7	0.0		C	7.8		D	10.9		C	5.1		21 B	0.0
	8	2.7		E	4.5		S	0.0		E	2.0		24A	3.7
IC308	1	6.7	Q104	B	4.5	Q301	B	4.9	Q322	B	6.7		24 B	4.2
	2	6.1		C	12.2		C	0.0		C	0.0		25 B	5.1
	3	6.1		E	3.9		E	5.5		E	7.4		28A	0.0
	4	0.0	Q105	B	2.2	Q302	B	4.9	Q323	B	6.7		28 B	0.0
	5	3.8		C	0.0		C	12.3		C	12.1		29A	0.0
	6	3.8		E	2.8		E	4.2		E	6.1		29 B	0.0
	7	3.8	Q106	B	2.8	Q303	B	4.3	Q324	B	10.8		30A	0.0
	8	12.1		C	5.1		C	10.8		C	12.3		30 B	0.0
				E	2.2		E	3.6		E	10.1			
			Q107	B	2.2	Q304	B	6.1	Q325	B	5.5			
				C	0.0		C	0.0		C	12.3			
				E	2.8		E	6.7		E	4.8			
			Q108	B	2.8	Q305	B	6.1	Q326	B	4.6			
				C	5.1		C	12.3		C	12.2			
				E	2.2		E	5.4		E	4.0			



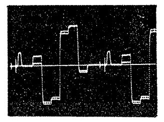
TP1 4.5 Vp-p
(15.625 kHz)



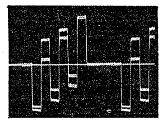
TP7 0.3 Vp-p



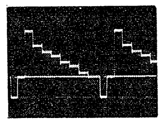
TP8 0.18 Vp-p



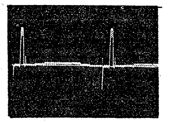
TP9 1.1 Vp-p
TP14 0.6 Vp-p



TP13 0.68 Vp-p
TP15 0.6 Vp-p
TP18 0.6 Vp-p
TP20 0.65 Vp-p

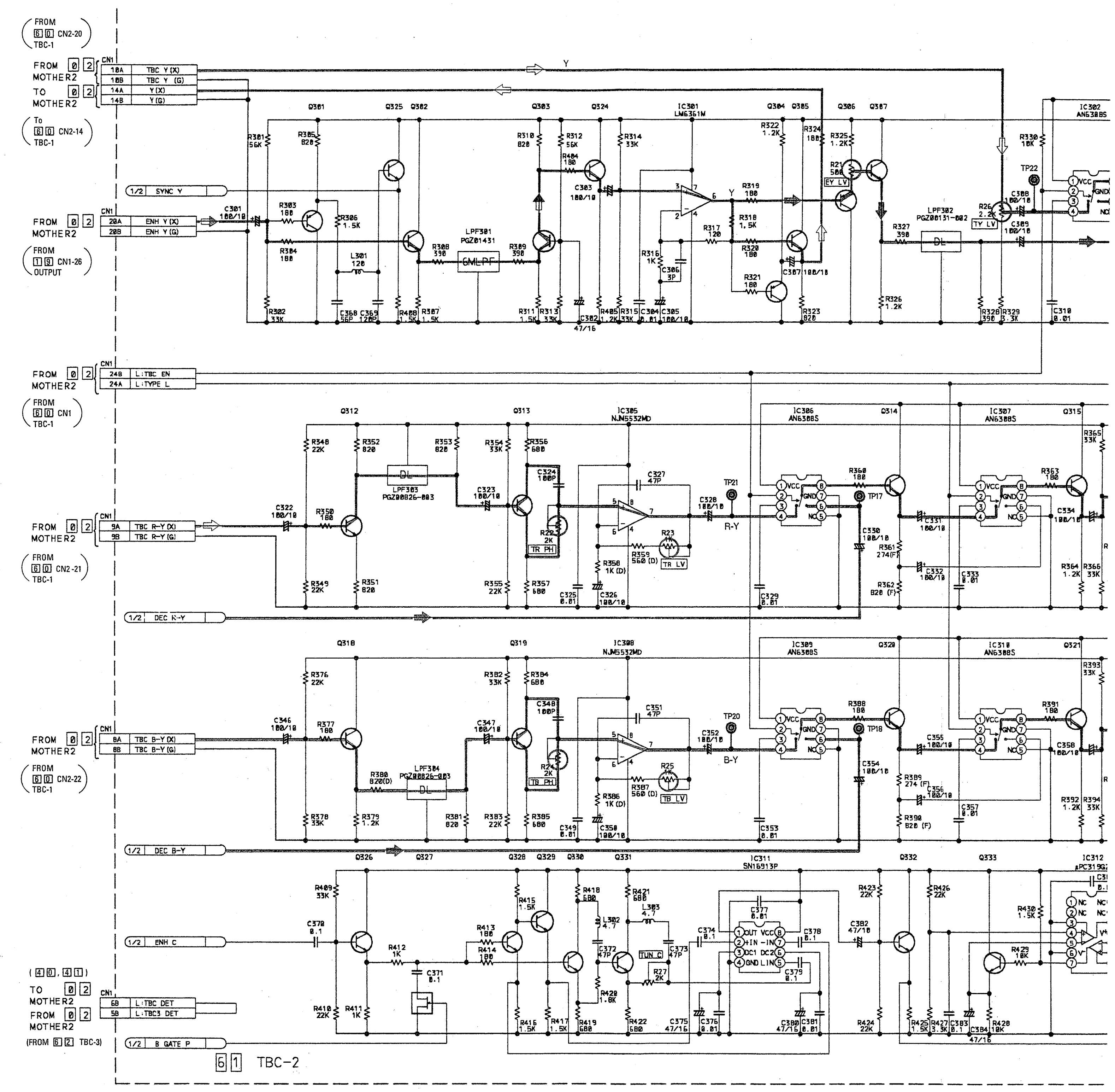


TP19 0.96 Vp-p
TP22 0.98 Vp-p

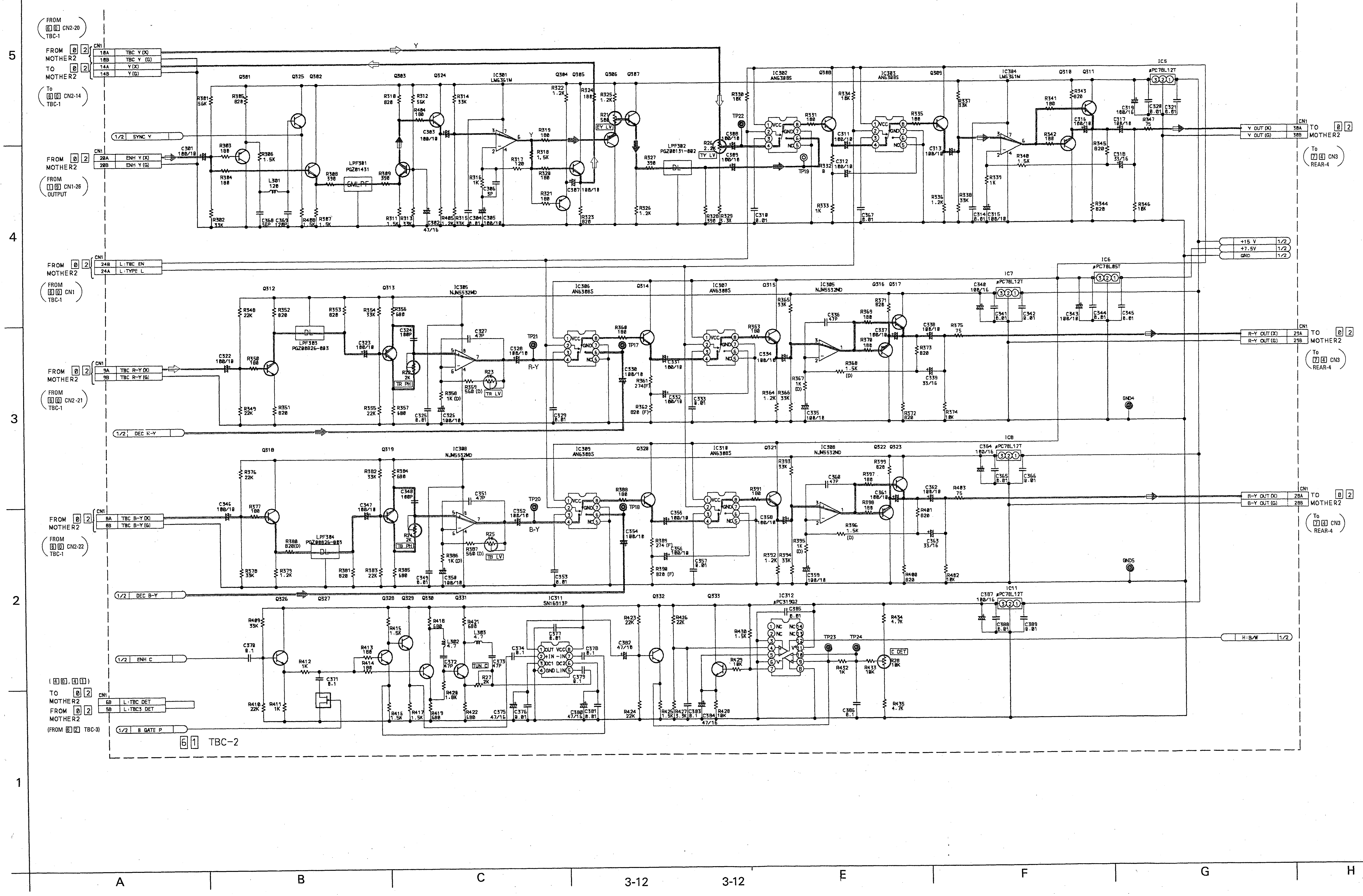


TP23 0.44 Vp-p

— DIAGRAM (2/2) —


6
5
4
3
2
1
A
B
C
FROM 6 0 CN2-20 TBC-1
FROM 0 2 MOTHER2
TO 0 2 MOTHER2
CN1
10A TBC Y (X)
10B TBC Y (G)
14A Y (X)
14B Y (G)
To 6 0 CN2-14 TBC-1
1/2 SYNC Y
FROM 0 2 MOTHER2
20A ENH Y (X)
20B ENH Y (G)
FROM 1 9 CN1-26 OUTPUT
Y
Q301
Q325
Q302
Q303
Q324
IC301 LM6361M
Q304
Q305
Q306
Q307
IC302 AN6308S
R301 56K
R305 820
R310 820
R312 56K
R314 33K
R404 180
R303 180
R306 1.5K
R304 180
C301 100/10
L301 120
LPF301 PGZ01431
GMLPF
R308 390
R309 390
C303 100/10
R302 33K
C368 56P
C369 120P
R408 1.5K
R307 1.5K
R311 1.5K
R313 33K
C302 47/16
R405 1.2K
R315 33K
C304 0.01
C305 100/10
R316 1K
C306 3P
R317 120
R318 1.5K
R319 180
R320 180
R321 180
R322 1.2K
R323 820
R324 180
C307 100/10
R325 1.2K
R21 500
EY LV
R326 1.2K
R327 390
DL
LPF302 PGZ00131-002
R26 2.2K
TY LV
C308 100/10
C309 100/10
R328 390
R329 3.3K
R330 10K
TP22
C310 0.01
FROM 0 2 MOTHER2
24B L:TBC EN
24A L:TYPE L
FROM 6 0 CN1 TBC-1
Q312
Q313
IC305 NJM5532MD
IC306 AN6308S
Q314
IC307 AN6308S
Q315
FROM 0 2 MOTHER2
9A TBC R-Y (X)
9B TBC R-Y (G)
FROM 6 0 CN2-21 TBC-1
R348 22K
R352 820
R353 820
R354 33K
R356 680
LPF303 PGZ00826-003
C322 100/10
R350 180
C323 100/10
C324 100P
R22 2K
TR PH
C327 47P
R23 1K
R359 560 (D)
TR LV
R358 1K (D)
R349 22K
R351 820
R355 22K
R357 680
C325 0.01
C326 100/10
C328 100/10
TP21
R-Y
C329 0.01
R360 180
TP17
C330 100/10
C331 100/10
R361 274(F)
C332 100/10
R362 820 (F)
C333 0.01
R363 180
R365 33K
C334 100/10
R364 1.2K
R366 33K
VCC
GND
NC
1/2 DEC R-Y
Q318
Q319
IC308 NJM5532MD
IC309 AN6308S
Q320
IC310 AN6308S
Q321
FROM 0 2 MOTHER2
8A TBC B-Y (X)
8B TBC B-Y (G)
FROM 6 0 CN2-22 TBC-1
R376 22K
R382 33K
R384 680
C346 100/10
R377 180
C347 100/10
C348 100P
R380 820(D)
LPF304 PGZ00826-003
R24 2K
TB PH
C351 47P
R25 1K
R387 560 (D)
TB LV
R386 1K (D)
R378 33K
R379 1.2K
R381 820
R383 22K
R385 680
C349 0.01
C350 100/10
C352 100/10
TP20
B-Y
C353 0.01
R388 180
TP18
C354 100/10
C355 100/10
R389 274 (F)
C356 100/10
R390 820 (F)
C357 0.01
R391 180
R393 33K
C358 100/10
R392 1.2K
R394 33K
1/2 DEC B-Y
Q326
Q327
Q328
Q329
Q330
Q331
IC311 SN16913P
Q332
Q333
IC312 μPC319G2
R409 33K
C370 0.1
1/2 ENH C
R412 1K
C371 0.1
R413 180
R414 180
R415 1.5K
R418 680
L302 4.7
C372 47P
R420 1.8K
R421 680
L303 4.7
TUN C
C373 47P
R27 2K
C374 0.1
C377 0.01
OUT VCC
+IN -IN
DC1 DC2
GND LIN
C378 0.1
C379 0.1
C382 47/10
R423 22K
R426 22K
R430 1.5K
R429 10K
R410 22K
R411 1K
R416 1.5K
R417 1.5K
R419 680
R422 680
C375 47/16
C376 0.01
C380 47/16
C381 0.01
R424 22K
R425 1.5K
R427 3.3K
C383 0.1
C384 47/16
R428 10K
(4 0, 4 1)
TO 0 2 MOTHER2
FROM 0 2 MOTHER2
6B L:TBC DET
5B L:TBC3 DET
(FROM 6 2 TBC-3)
1/2 B GATE P
6 1 TBC-2

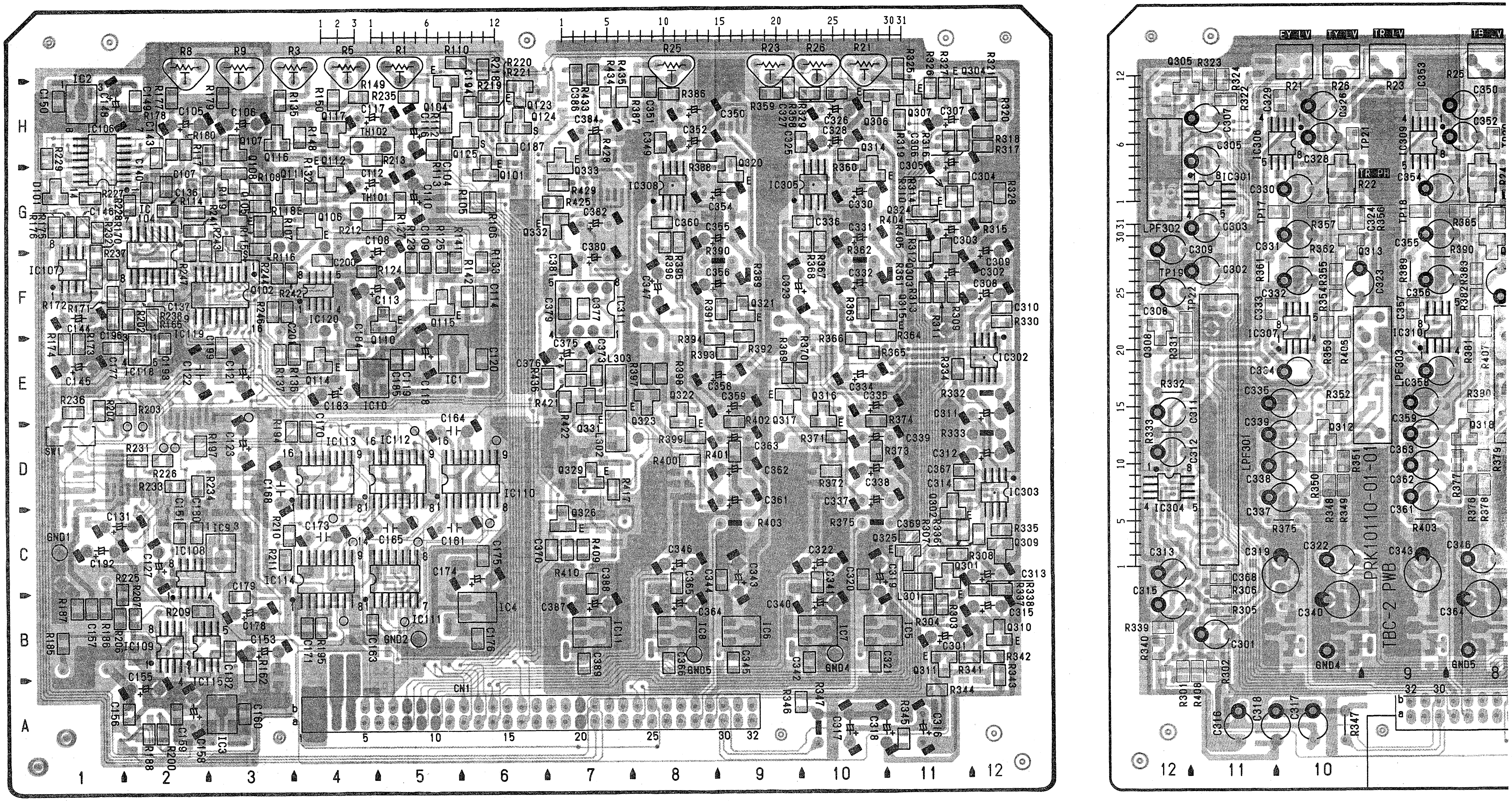
— DIAGRAM (2/2) —



FROM 60 CN2-20 TBC-1
FROM 02 MOTHER2
TO 02 MOTHER2
To 60 CN2-14 TBC-1
CN1
18A TBC Y (X)
18B TBC Y (G)
14A Y (X)
14B Y (G)
Y
1/2 SYNC Y
FROM 02 MOTHER2
20A ENH Y (X)
20B ENH Y (G)
FROM 10 CN1-26 OUTPUT
Q301 Q325 Q302 Q303 Q324 Q304 Q305 Q306 Q307 Q308 Q309 Q310 Q311
IC301 LM6361M
IC302 AN6308S
IC303 AN6308S
IC304 LM6361M
IC5 μPC78L12T
LPF301 PGZ01431
SML PF
LPF302 PGZ00131-002
DL
EY LV
TY LV
TP22 TP19
R301 56K
R305 820
R303 100
R306 1.5K
R304 100
L301 120
C301 100/10
R308 390
R309 390
R302 33K
C368 120P
C369 120P
R400 1.5K
R307 1.5K
R310 820
R312 56K
R404 100
R314 33K
C303 100/10
R311 1.5K
R313 33K
C382 47/16
R405 1.2K
R315 33K
C304 0.01
C385 100/10
R316 1K
C386 3P
R317 120
R319 100
R318 1.5K
R320 100
R321 100
C387 100/10
R322 1.2K
R324 100
R325 1.2K
R21 500
R323 820
R326 1.2K
R327 390
R26 2.2K
C308 100/10
C309 100/10
R328 390
R329 3.3K
C310 0.01
R330 10K
R331 100
C311 100/10
R332 0
R333 1K
C312 100/10
R334 10K
R335 100
C367 0.01
C313 100/10
R336 1.2K
R337 3.3K
R338 33K
C314 0.01
C315 100/10
R339 1K
R341 100
R340 1.5K
R342 100
R343 820
C316 100/10
R345 820
R344 820
C319 100/16
C320 0.01
C321 0.01
C317 100/10
R347 75
C318 33/16
R346 10K
CN1
Y OUT (X) 38A
Y OUT (G) 38B
TO 02 MOTHER2
To 74 CN3 REAR-4
+15 V 1/2
+7.5V 1/2
GND 1/2
FROM 02 MOTHER2
24B L:TBC EN
24A L:TYPE L
FROM 60 CN1 TBC-1
Q312 Q313 Q314 Q315 Q316 Q317
IC305 NJM5532MD
IC306 AN6308S
IC307 AN6308S
IC305 NJM5532MD
IC6 μPC78L05T
IC7 μPC78L12T
LPF303 PGZ00826-003
R348 22K
R352 820
R353 820
R354 33K
R356 680
C324 100P
C327 47P
TP21
R-Y
C322 100/10
R350 100
C323 100/10
R22 2K
TR PH
R23
TR LV
R358 1K (D)
R359 560 (D)
C328 100/10
C325 0.01
C326 100/10
R349 22K
R351 820
R355 22K
R357 680
C329 0.01
C330 100/10
R360 100
TP17
C331 100/10
R361 274(F)
C332 100/10
C333 0.01
R362 820 (F)
R363 100
C334 100/10
R364 1.2K
R366 33K
R365 33K
C336 47P
R369 100
R371 820
C337 100/10
R370 100
R367 1K (D)
R368 1.5K (D)
C335 100/10
R372 820
R373 820
C339 33/16
R374 10K
C338 100/10
R375 75
C340 100/16
C341 0.01
C342 0.01
C343 100/16
C344 0.01
C345 0.01
GND4
FROM 02 MOTHER2
9A TBC R-Y (X)
9B TBC R-Y (G)
FROM 60 CN2-21 TBC-1
1/2 DEC R-Y
CN1
R-Y OUT (X) 29A
R-Y OUT (G) 29B
TO 02 MOTHER2
To 74 CN3 REAR-4
Q318 Q319 Q320 Q321 Q322 Q323
IC308 NJM5532MD
IC309 AN6308S
IC310 AN6308S
IC308 NJM5532MD
IC8 μPC78L12T
R376 22K
C346 100/10
R377 100
R380 820(D)
LPF304 PGZ00826-003
R378 33K
R379 1.2K
R381 820
C347 100/10
R382 33K
R384 680
C348 100P
C351 47P
TP20
B-Y
C352 100/10
R24 2K
TB PH
R25
TB LV
R386 1K (D)
R387 560 (D)
R383 22K
R385 680
C349 0.01
C350 100/10
C353 0.01
C354 100/10
R388 100
TP18
C356 100/10
R389 274 (F)
C355 100/10
C357 0.01
R390 820 (F)
R391 100
C358 100/10
R392 1.2K
R394 33K
R393 33K
C360 47P
R397 100
R399 820
C361 100/10
R398 100
R395 1K (D)
R396 1.5K (D)
C359 100/10
R400 820
R401 820
C363 33/16
R402 10K
C362 100/10
R403 75
C364 100/16
C365 0.01
C366 0.01
GND5
FROM 02 MOTHER2
8A TBC B-Y (X)
8B TBC B-Y (G)
FROM 60 CN2-22 TBC-1
1/2 DEC B-Y
CN1
B-Y OUT (X) 28A
B-Y OUT (G) 28B
TO 02 MOTHER2
To 74 CN3 REAR-4
Q326 Q327 Q328 Q329 Q330 Q331 Q332 Q333
IC311 SN16913P
IC312 μPC319G2
IC11 μPC78L12T
R409 33K
C370 0.1
1/2 ENH C
R412 1K
C371 0.1
R410 22K
R411 1K
R413 100
R414 100
R415 1.5K
R416 1.5K
R417 1.5K
R418 680
R419 680
R420 1.8K
R421 680
L302 4.7
L303 4.7
C372 47P
TUN C
C373 47P
R27 2K
R422 680
C375 47/16
C374 0.1
C376 0.01
C377 0.01
C378 0.1
C379 0.1
C380 47/16
C381 0.01
OUT VCC
IN -IN
DC1 DC2
GND LIN
R423 22K
C382 47/10
R424 22K
R426 22K
R425 1.5K
R427 3.3K
C383 0.1
C384 47/16
R428 10K
R429 10K
R430 1.5K
C385 0.01
NC
V+
TP23 TP24
R432 1K
R433 10K
R28 10K
C DET
R434 4.7K
R435 4.7K
C386 0.1
C387 100/16
C388 0.01
C389 0.01
H:B/W 1/2
(60, 61)
TO 02 MOTHER2
FROM 02 MOTHER2
6B L:TBC DET
5B L:TBC3 DET
(FROM 62 TBC-3)
1/2 B GATE P
61 TBC-2
6 5 4 3 2 1
A B C D E F G H

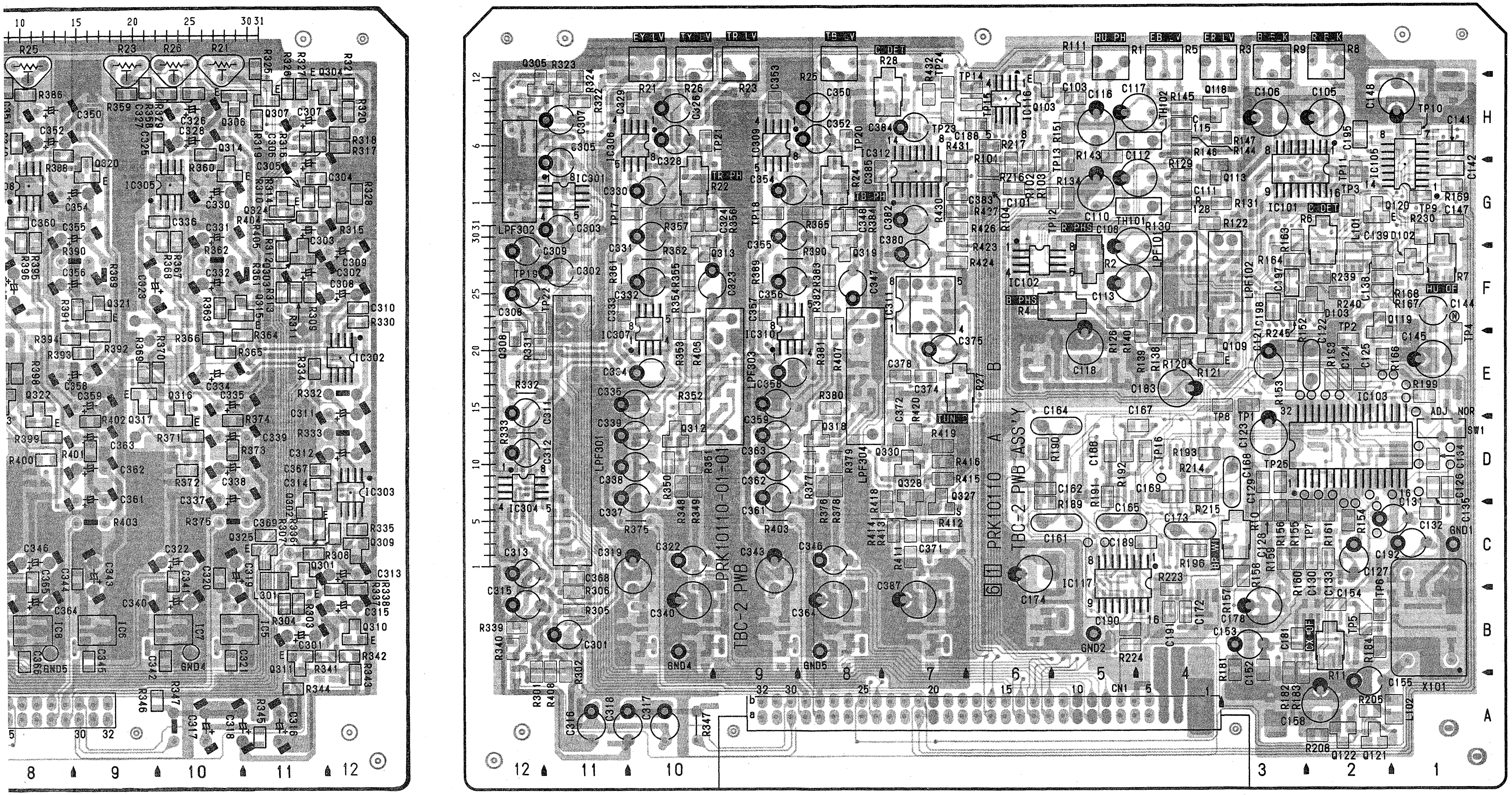
3.7 TBC-2 CIRCUIT BOARD

— Rear —


CN1
IC1
IC3
IC4
IC5
IC6
IC7
IC8
IC10
IC11
GND1
GND2
GND4
GND5
SW1
EY LV
TY LV
TR LV
TB LV
TR PH
LPF301
LPF302
LPF303
TP17
TP18
TP19
TP21
TP22
PRK10110-01-01
TBC-2 PWB
R1
R3
R5
R8
R9
R21
R23
R25
R26
R110
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

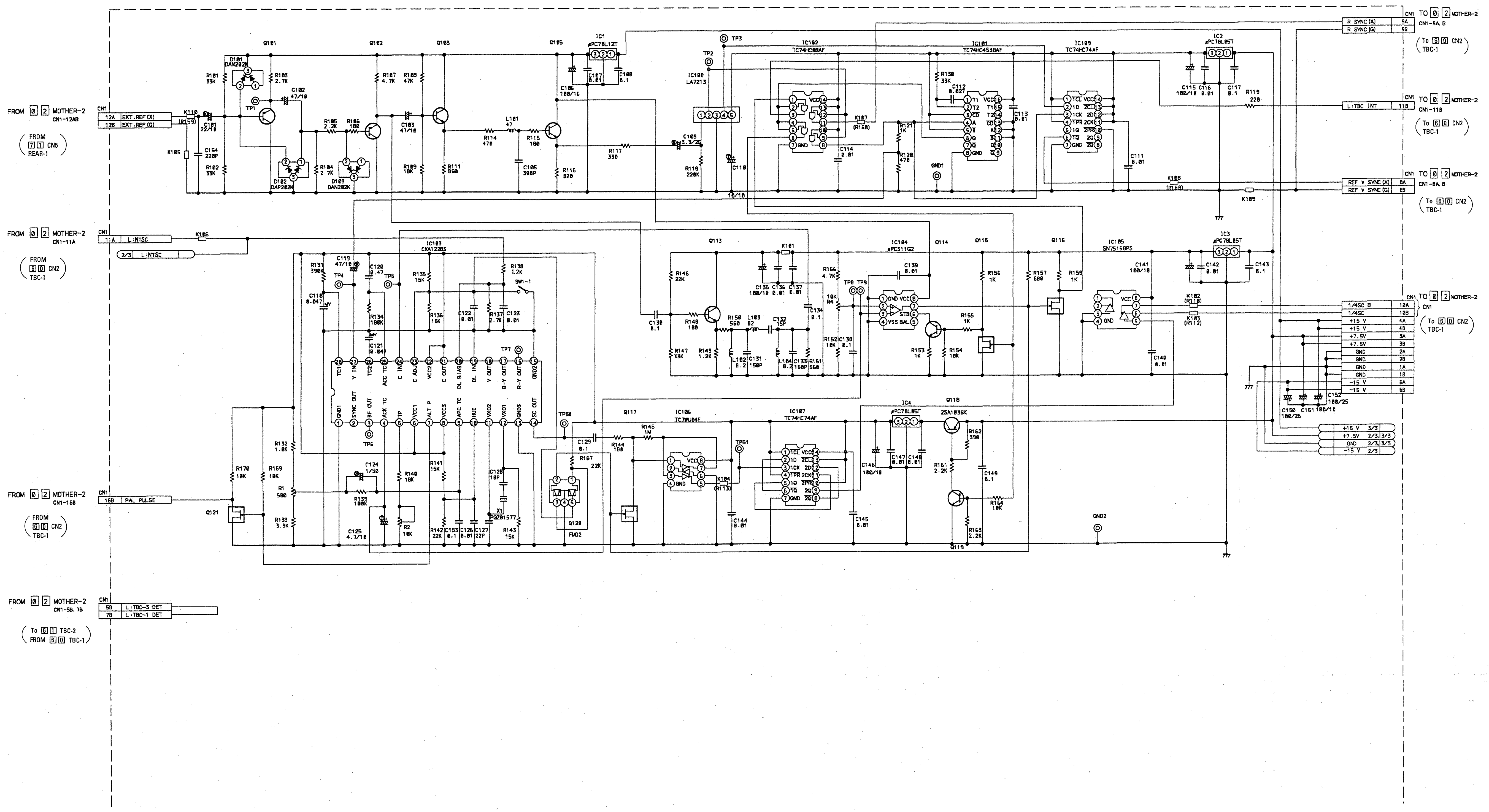
6
5
4
3
2
1
A
B
C
E
F
G
H

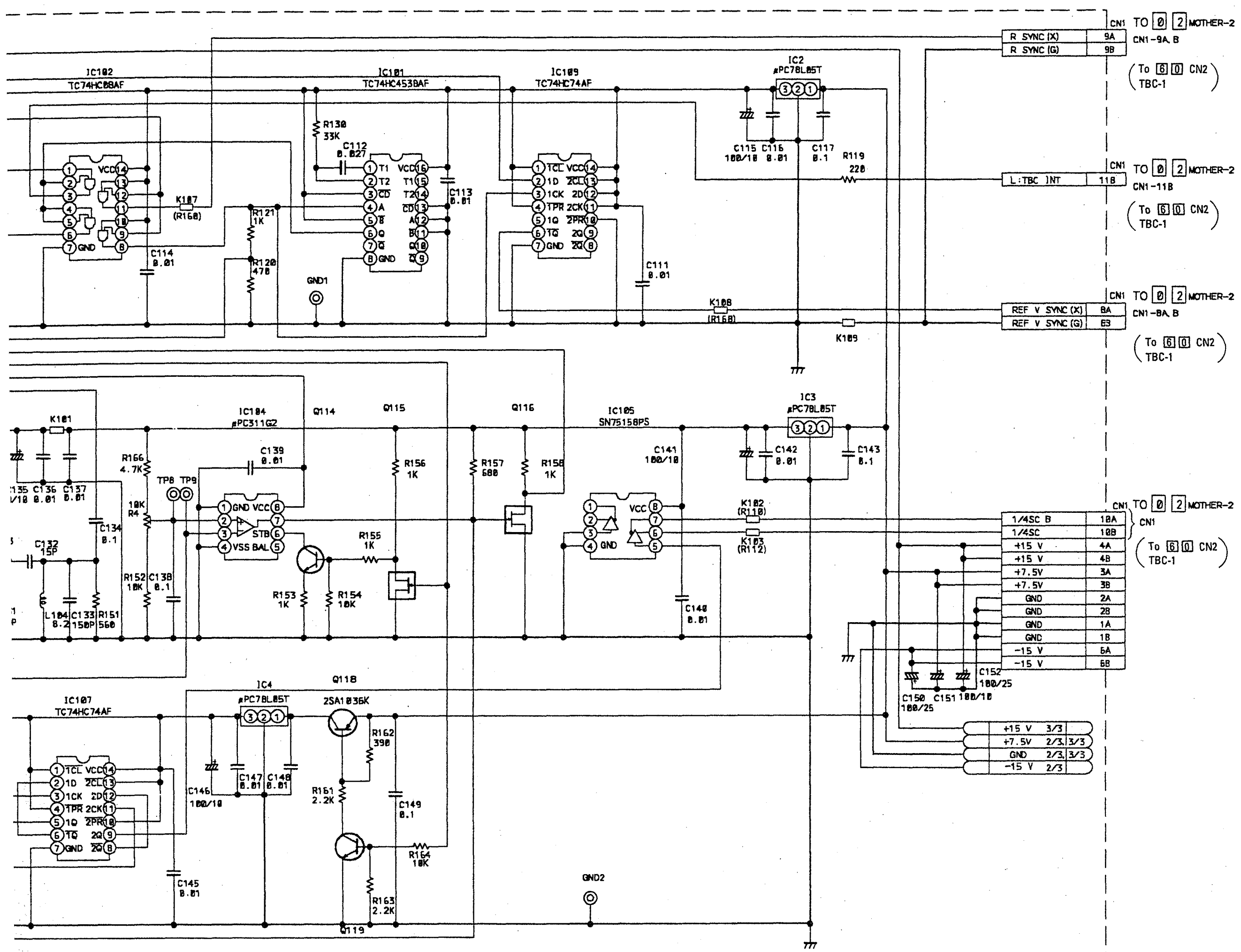
— Front —


TBC-2 PWB ASS'Y
PRK10110
TBC-2 PWB
PRK10110-01-01
EY LV
TY LV
TR LV
TB LV
C DET
HU PH
EB LV
ER LV
B E K
R E K
TR PH
TB PH
R PHS
B PHS
TUN
HU OF
BP WI
CX OF
ADJ
NOR
SW1
CN1
X101
GND1
GND2
GND4
GND5
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12

3.8 TBC-3 SCHEMATIC DIAGRAM

— DIAGRAM (1/3) —

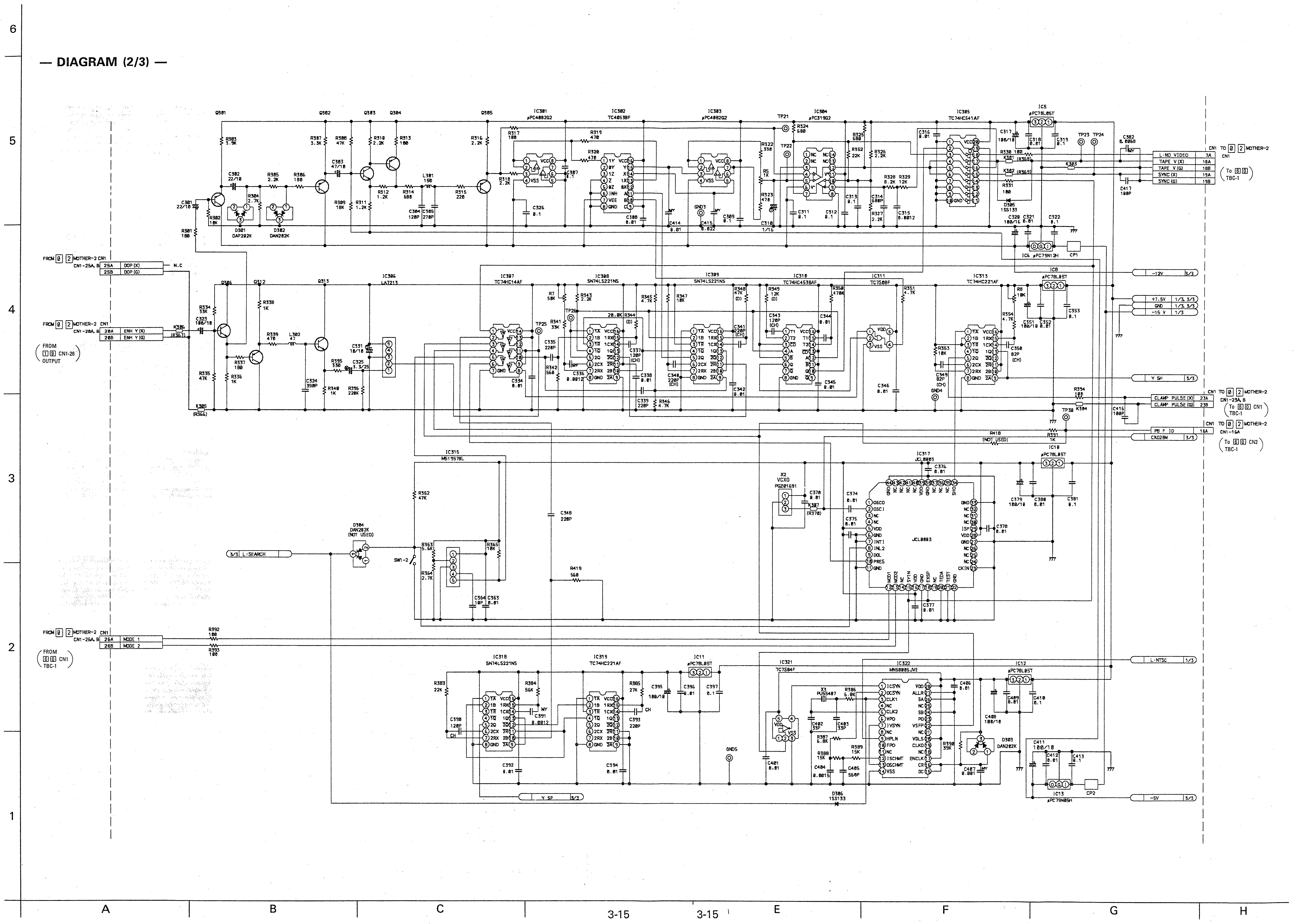

FROM 0 2 MOTHER-2 CN1-12AB
(FROM 7 1 CN5 REAR-1)
CN1
12A EXT.REF (X)
12B EXT.REF (G)
K110 (R159)
C101 22/10
K105
C154 220P
R101 33K
R102 33K
D101 DAN202K
D102 DAP202K
D103 DAN202K
TP1
Q101
Q102
Q103
Q105
C102 47/10
R103 2.7K
R104 2.7K
R105 2.2K
R106 100
R107 4.7K
R108 47K
R109 10K
R111 860
C103 47/10
L101 47
R114 470
R115 100
C105 390P
R116 820
R117 330
IC1 μPC78L12T
C106 100/16
C107 0.01
C108 0.1
TP2
TP3
IC100 LA7213
C109 3.3/25
R118 220K
C110
10/10
IC102 TC74HC86AF
K107 (R168)
C114 0.01
R121 1K
R120 470
GND1
IC101 TC74HC4538AF
R130 33K
C112 0.027
C113 0.01
IC109 TC74HC74AF
C111 0.01
IC2 μPC78L05T
C115 100/10
C116 0.01
C117 0.1
R119 220
K108 (R168)
K109
FROM 0 2 MOTHER-2 CN1-11A
(FROM 6 0 CN2 TBC-1)
CN1
11A L:NTSC
2/3 L:NTSC
K106
IC103 CXA1220S
R131 390K
C119 47/10
TP4
C118 0.047
C120 0.47
TP5
R134 100K
C121 0.047
R135 15K
R136 15K
C122 0.01
R137 2.7K
C123 0.01
R138 1.2K
SW1-1
TP7
TC1
Y IN
TC2
ACC TC
C IN
C ADJ
VCC2
C OUT
DL BIAS
DL IN
Y OUT
B-Y OUT
R-Y OUT
GND2
GND1
SYNC OUT
BF OUT
ACK TC
TP
VCC1
ALT P
VCC3
APC TC
HUE
VXO2
VXO1
GND3
SC OUT
TP6
R132 1.8K
R1 500
R133 3.9K
C124 1/50
R139 100K
R140 10K
R141 15K
R2 10K
C125 4.7/10
R142 22K
C153 0.1
C126 0.01
C127 22P
C128 18P
X1 PQZ01577
R143 15K
TP50
Q120 FMG2
R167 22K
C129 0.1
R170 10K
R169 10K
FROM 0 2 MOTHER-2 CN1-16B
(FROM 6 0 CN2 TBC-1)
CN1
16B PAL PULSE
Q121
FROM 0 2 MOTHER-2 CN1-5B, 7B
(To 6 1 TBC-2 FROM 6 0 TBC-1)
CN1
5B L:TBC-3 DET
7B L:TBC-1 DET
Q113
R146 22K
C130 0.1
R148 100
R147 33K
R145 1.2K
R150 560
L103 82
C132 15P
L102 8.2
C131 150P
L104 8.2
C133 150P
R151 560
K101
C135 100/10
C136 0.01
C137 0.01
C134 0.1
R166 4.7K
R4 10K
R152 10K
C138 0.1
TP8
TP9
IC104 μPC511G2
C139 0.01
GND VCC
STB
VSS BAL
Q114
Q115
R156 1K
R155 1K
R153 1K
R154 10K
Q116
R157 680
R158 1K
IC105 SN75158PS
VCC
GND
C141 100/10
C140 0.01
K102 (R110)
K103 (R112)
IC3 μPC78L05T
C142 0.01
C143 0.1
Q117
IC106 TC7WU04F
R145 1M
R144 100
TP51
K104 (R113)
C144 0.01
IC107 TC74HC74AF
C145 0.01
IC4 μPC78L05T
C146 100/10
C147 0.01
C148 0.01
Q118 2SA1036K
Q119
R162 390
R161 2.2K
C149 0.1
R164 10K
R163 2.2K
GND2
C150 100/25
C151 100/10
C152 100/25
CN1 TO 0 2 MOTHER-2 CN1-9A, B
(To 6 0 CN2 TBC-1)
R SYNC (X) 9A
R SYNC (G) 9B
CN1 TO 0 2 MOTHER-2 CN1-11B
(To 6 0 CN2 TBC-1)
L:TBC INT 11B
CN1 TO 0 2 MOTHER-2 CN1-8A, B
(To 6 0 CN2 TBC-1)
REF V SYNC (X) 8A
REF V SYNC (G) 8B
CN1 TO 0 2 MOTHER-2 CN1
(To 6 0 CN2 TBC-1)
1/4SC B 10A
1/4SC 10B
+15 V 4A
+15 V 4B
+7.5V 3A
+7.5V 3B
GND 2A
GND 2B
GND 1A
GND 1B
-15 V 6A
-15 V 6B
+15 V 3/3
+7.5V 2/3, 3/3
GND 2/3, 3/3
-15 V 2/3
6
5
4
3
2
1
A
B
C
D
E
F
G


IC102 TC74HC86AF
IC101 TC74HC4538AF
IC109 TC74HC74AF
IC2 µPC78L05T
CN1 TO 8 2 MOTHER-2
CN1-9A, B
(To 6 0 CN2 TBC-1)
R SYNC (X)
R SYNC (G)
L-TBC INT
CN1-11B
REF V SYNC (X)
REF V SYNC (G)
CN1-8A, B
IC104 µPC311G2
Q114
Q115
Q116
IC105 SN75158PS
IC3 µPC78L05T
1/4SC B
1/4SC
+15 V
+7.5V
GND
-15 V
IC107 TC74HC74AF
IC4 µPC78L05T
Q118 2SA1036K
Q119
GND1
GND2
+15 V 3/3
+7.5V 2/3 3/3
GND 2/3 3/3
-15 V 2/3
E
F
G

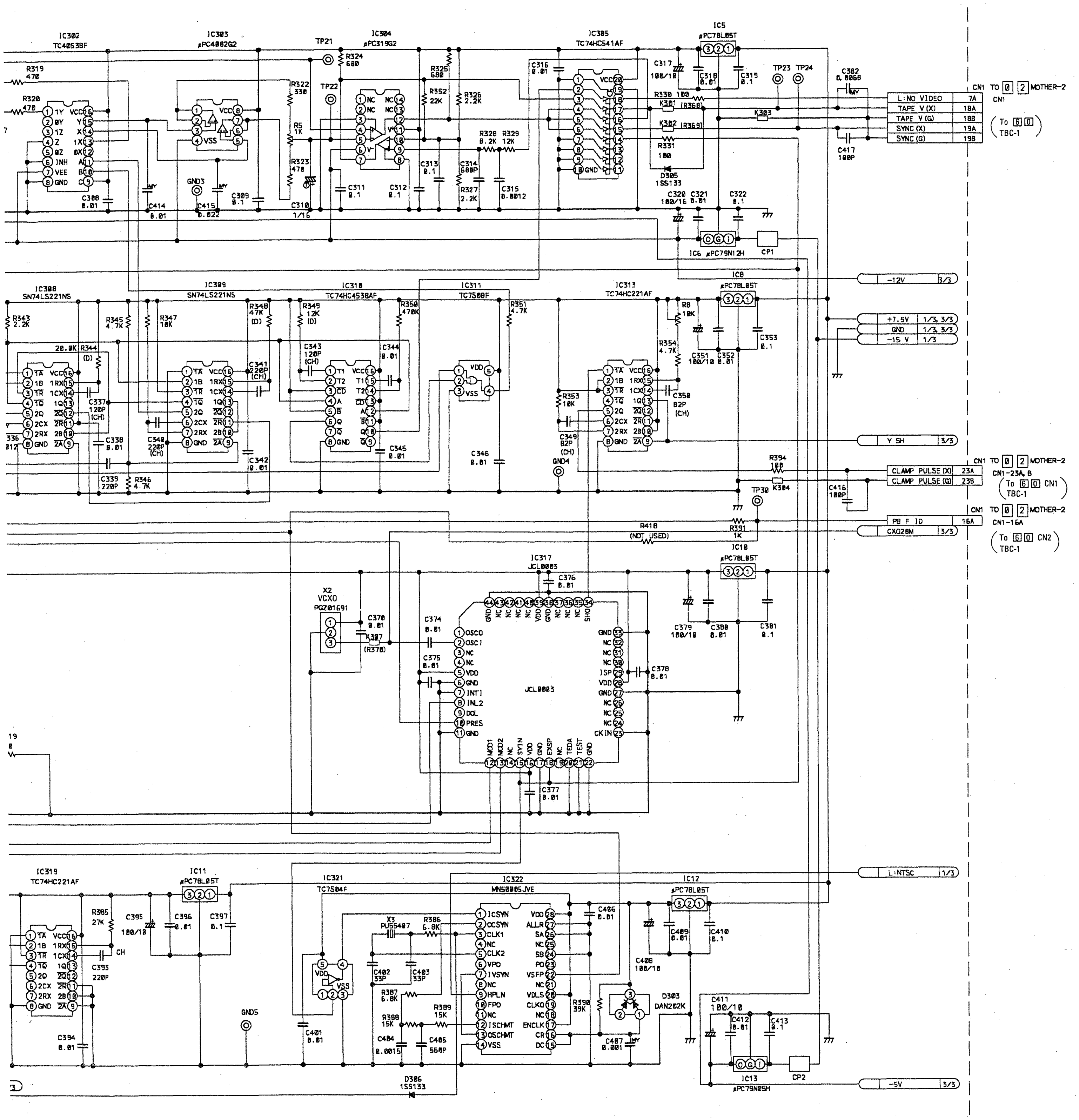
- DC voltage (1/3) - (TBC 3)

SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
INTEGRATED CIRCUIT			IC101	13	0.0	IC105	5	1.4	IC302	9	5.1	IC307	7	0.0
IC 1	1	14.7		14	5.1		6	3.6		10	0.2		8	0.4
	2	0.0		15	0.0		7	0.1		11	0.2		9	4.5
	3	12.1		16	5.1		8	5.1		12	- 0.8		10	0.4
IC 2	1	7.9	IC102	1	0.1	IC106	1	0.0		13	- 0.4		11	4.5
	2	0.0		2	0.0		2	0.8		14	- 0.8		12	0.0
	3	5.1		3	0.0		3	0.8		15	- 1.3		13	5.1
IC 3	1	7.9		4	0.0		4	0.0		16	5.1		14	5.1
	2	0.0		5	0.0		5	0.0	IC303	1	- 1.2	IC308	1	2.9
	3	5.1		6	0.0		6	0.0		2	- 1.3		2	0.2
IC 4	1	0.6		7	0.0		7	1.1		3	- 1.3		3	4.0
	2	0.0		8	5.1		8	1.1		4	-12.2		4	5.0
	3	1.1		9	5.1	IC107	1	0.8		5	- 0.8		5	2.9
IC 5	1	7.9		10	5.1		2	0.8		6	- 0.8		6	2.3
	2	0.0		11	5.1		3	0.0		7	- 0.8		7	- 0.4
	3	5.1		12	5.1		4	0.8		8	5.1		8	0.0
IC 6	1	0.0		13	5.1		5	0.0	IC304	1	0.0		9	0.0
	2	-14.9		14	5.1		6	0.8		2	0.0		10	4.0
	3	-12.2	IC103	1	0.0		7	0.0		3	0.0		11	5.1
IC 8	1	7.9		2	0.8		8	0.8		4	- 0.4		12	1.8
	2	0.0		3	0.8		9	1.4		5	- 1.0		13	0.2
	3	5.1		4	0.5		10	0.8		6	-12.2		14	5.0
IC 10	1	7.9		5	0.0		11	0.0		7	5.0		15	0.7
	2	0.0		6	0.0		12	0.8		8	0.0		16	5.1
	3	5.2		7	0.8		13	0.8		9	3.7	IC309	1	0.0
IC 11	1	7.9		8	0.8		14	0.8		10	2.7		2	5.0
	2	0.0		9	0.6	IC108	1	2.7		11	5.1		3	5.1
	3	5.1		10	0.6		2	5.1		12	4.7		4	4.0
IC 12	1	7.9		11	0.3		3	0.0		13	0.0		5	0.2
	2	0.0		12	0.0		4	5.1		14	0.0		6	5.0
	3	5.1		13	0.0		5	5.1	IC305	1	0.0		7	0.8
IC 13	1	0.0		14	0.0	IC109	1	5.1		2	5.1		8	0.0
	2	-14.9		15	0.0		2	5.1		3	5.0		9	2.6
	3	- 5.0		16	0.0		3	5.0		4	4.7		10	0.6
IC 14	1	7.9		17	0.0		4	5.1		5	4.7		11	1.8
	2	0.0		18	0.1		5	5.1		6	4.7		12	4.4
	3	5.1		19	0.0		6	0.0		7	0.0		13	0.6
IC 15	1	14.7		20	1.5		7	0.0		8	0.0		14	4.6
	2	0.0		21	0.8		8	0.0		9	0.0		15	0.6
	3	12.2		22	0.8		9	5.1		10	0.0		16	5.1
IC 16	1	7.9		23	0.4		10	0.0		11	0.0	IC310	1	0.0
	2	0.0		24	0.3		11	5.1		12	0.0		2	4.7
	3	5.1		25	0.0		12	5.1		13	0.0		3	5.1
IC 19	1	7.9		26	0.0		13	5.1		14	4.7		4	5.0
	2	0.0		27	0.4		14	5.1		15	4.7		5	5.1
	3	5.1		28	0.8	IC301	1	0.0		16	4.7		6	0.0
IC 20	1	7.9	IC104	1	0.0		2	- 0.4		17	5.1		7	5.0
	2	0.0		2	3.5		3	- 0.4		18	5.1		8	0.0
	3	5.1		3	0.5		4	-12.2		19	0.0		9	0.0
IC101	1	0.0		4	0.0		5	0.0		20	5.1		10	5.1
	2	5.1		5	11.9		6	0.0	IC306	1	3.0		11	5.1
	3	5.1		6	9.4		7	-10.7		2	4.5		12	5.0
	4	5.0		7	5.1		8	5.1		3	0.0		13	5.1
	5	5.1		8	12.1	IC302	1	- 0.4		4	5.1		14	1.0
	6	0.0	IC105	1	4.0		2	- 1.3		5	5.1		15	0.0
	7	5.1		2	0.1		3	0.0	IC307	1	4.7		16	5.1
	8	0.0		3	0.0		4	0.0		2	0.4	IC311	1	0.4
	9	5.1		4	0.0		5	0.0		3	2.4		2	0.2
	10	0.0					6	0.0		4	2.7		3	0.0
	11	0.0					7	-12.2		5	5.2		4	0.2
	12	0.0					8	0.0		6	0.0		5	5.1

— DIAGRAM (2/3) —



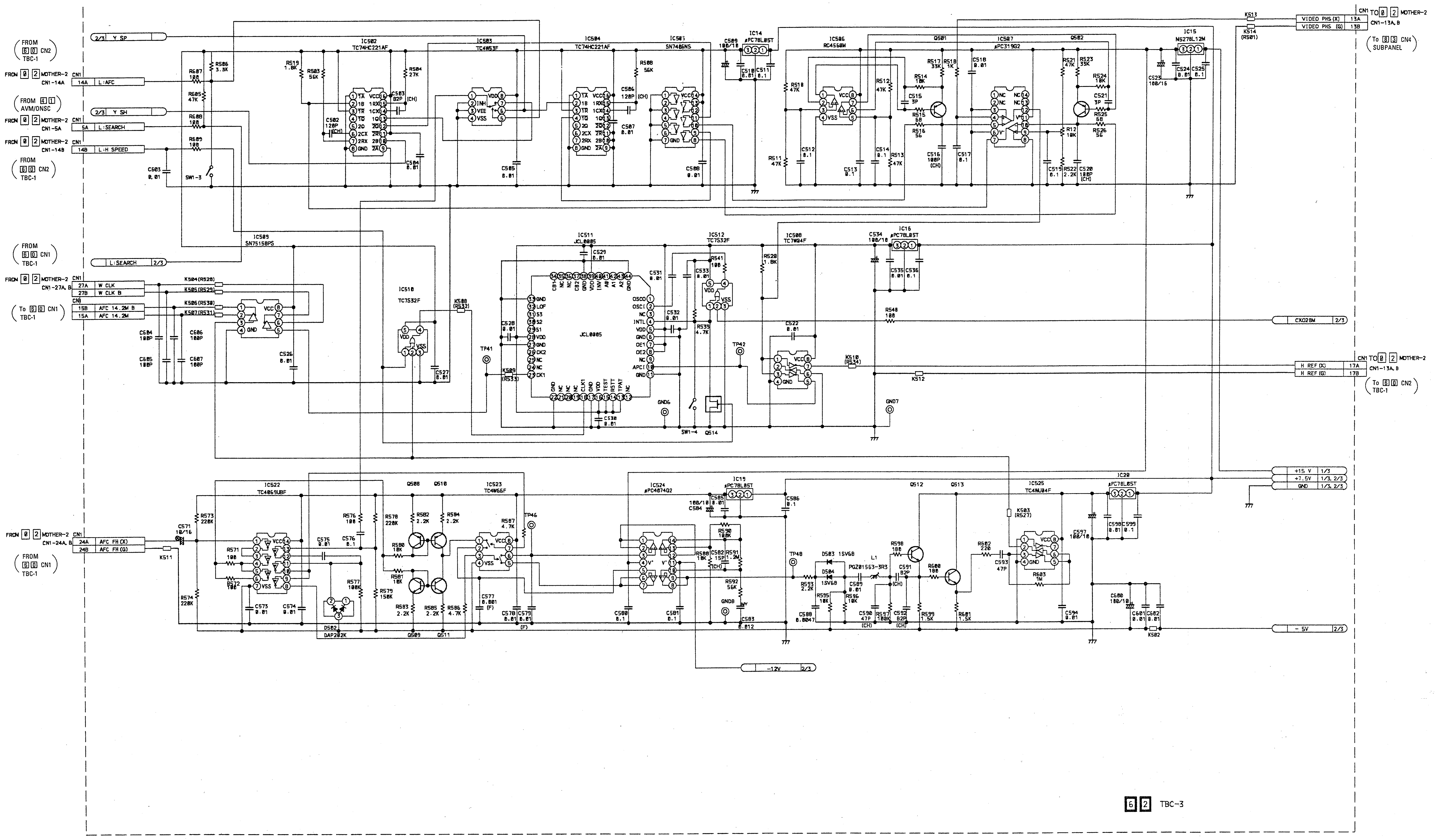
6
5
4
3
2
1
A
B
C
D
E
F
G
H
Q301
Q302
Q303
Q304
Q305
IC301 µPC4082G2
IC302 TC4053BF
IC303 µPC4082G2
IC304 µPC319G2
IC305 TC74HC541AF
IC5 µPC78L05T
IC6 µPC79N12H
CP1
TP21
TP22
TP23
TP24
D301 DAP202K
D302 DAN202K
D305 1SS133
C382 0.0068 MY
C417 100P
CN1 TO 0 2 MOTHER-2
CN1
L:NO VIDEO 7A
TAPE V (X) 18A
TAPE V (G) 18B
SYNC (X) 19A
SYNC (G) 19B
To 6 0 TBC-1
FROM 0 2 MOTHER-2 CN1
CN1-25A, B
25A DOP (X)
25B DOP (G)
N.C
FROM 0 2 MOTHER-2 CN1
CN1-28A, B
28A ENH Y (X)
28B ENH Y (G)
FROM 1 8 CN1-26 OUTPUT
Q306
Q312
Q313
IC306 LA7213
IC307 TC74HC14AF
IC308 SN74LS221NS
IC309 SN74LS221NS
IC310 TC74HC4538AF
IC311 TC7S08F
IC313 TC74HC221AF
IC8 µPC78L05T
TP25
TP26
TP30
GND4
-12V 3/3
+7.5V 1/3, 3/3
GND 1/3, 3/3
-15 V 1/3
Y SH 3/3
CN1 TO 0 2 MOTHER-2
CN1-23A, B
CLAMP PULSE (X) 23A
CLAMP PULSE (G) 23B
C416 100P
To 6 0 CN1 TBC-1
CN1 TO 0 2 MOTHER-2
CN1-16A
PB F ID 16A
CX028M 3/3
To 6 0 CN2 TBC-1
R410 (NOT USED)
IC315 M51957BL
IC317 JCL0003
IC10 µPC78L05T
X2 VCXO PG201691
D304 DAN202K (NOT USED)
SW1-2
3/3 L:SEARCH
R419 560
C348 220P
FROM 0 2 MOTHER-2 CN1
CN1-26A, B
26A MODE 1
26B MODE 2
R392 100
R393 100
FROM 6 0 CN1 TBC-1
IC318 SN74LS221NS
IC319 TC74HC221AF
IC11 µPC78L05T
IC321 TC7S04F
IC322 MN50005JVE
IC12 µPC78L05T
X3 PLS5407
D303 DAN202K
D306 1SS133
GND5
L:NTSC 1/3
Y SP 3/3
IC13 µPC79N05H
CP2
-5V 3/3


IC302 TC4053BF
IC303 μPC4082G2
IC304 μPC319G2
IC305 TC74HC541AF
IC5 μPC78L05T
IC6 μPC79N12H
IC308 SN74LS221NS
IC309 SN74LS221NS
IC310 TC74HC4538AF
IC311 TC7S08F
IC313 TC74HC221AF
IC8 μPC78L05T
IC317 JCL8003
IC10 μPC78L05T
X2 VCXO
IC319 TC74HC221AF
IC11 μPC78L05T
IC321 TC7S04F
IC322 MN58005JVE
IC12 μPC78L05T
IC13 μPC79N05H
L:NO VIDEO
TAPE V (X)
TAPE V (G)
SYNC (X)
SYNC (G)
-12V
+7.5V
GND
-15V
Y SH
CLAMP PULSE (X)
CLAMP PULSE (G)
PB F ID
CX02BM
L:NTSC
-5V
MOTHER-2
TBC-1
E
F
G
H

- DC voltage (2/3) - (TBC 3)

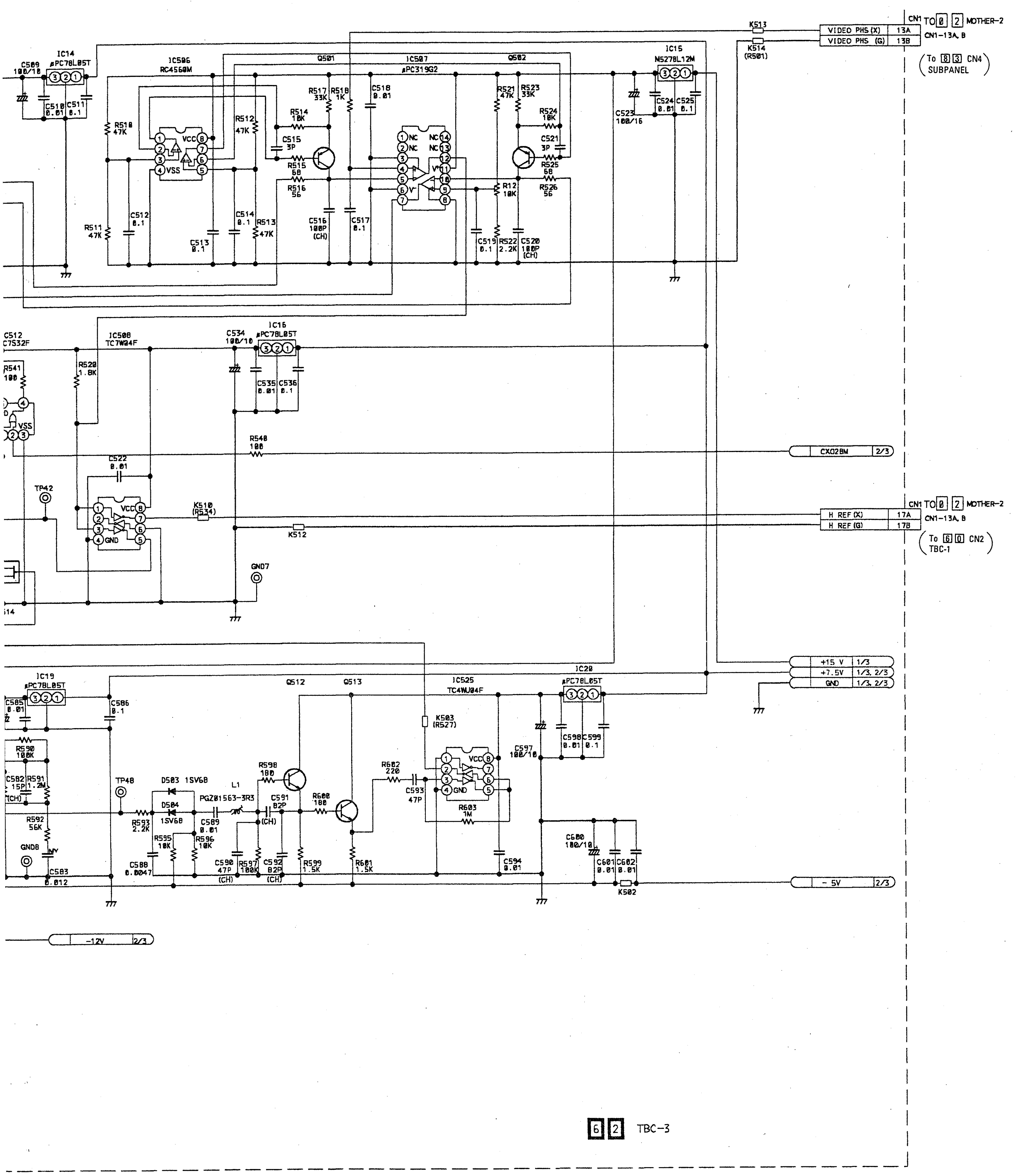
SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC313	1	5.0	IC317	41	0.0	IC322	21	0.0	IC505	11	4.4	IC511	15	5.1
	2	5.1		42	0.0		22	2.5		12	0.1		16	5.1
	3	5.1		43	0.0		23	0.1		13	5.1		17	0.0
	4	5.1		44	0.0		24	0.0		14	5.1		18	5.1
	5	0.1	IC318	1	0.0		25	0.0	IC506	1	5.5		19	0.0
	6	0.0		2	4.5		26	0.0		2	6.1		20	0.0
	7	5.0		3	5.1		27	0.0		3	6.1		21	0.0
	8	0.0		4	1.3		28	5.1		4	0.0		22	0.0
	9	0.1		5	0.2	IC502	1	0.0		5	6.1		23	2.5
	10	5.1		6	5.0		2	4.5		6	6.1		24	0.0
	11	5.1		7	0.7		3	5.1		7	5.6		25	0.0
	12	5.0		8	0.0		4	4.9		8	12.2		26	2.5
	13	0.1		9	3.5		5	0.7	IC507	1	0.0		27	0.0
	14	0.0		10	0.2		6	0.0		2	0.0		28	5.1
	15	4.9		11	4.5		7	3.8		3	0.0		29	P
	16	5.1		12	4.4		8	0.0		4	2.9		30	P
IC315	1	5.2		13	3.5		9	0.0		5	0.4		31	P
	2	1.7		14	1.7		10	0.1		6	0.0		32	0.0
	3	0.0		15	– 0.6		11	5.1		7	4.5		33	0.0
	4	1.2		16	5.1		12	4.4		8	0.0		34	2.4
	5	5.2	IC319	1	0.0		13	0.3		9	1.5		35	0.0
IC317	1	2.4		2	4.4		14	0.0		10	0.4		36	0.0
	2	2.5		3	5.1		15	4.5		11	12.2		37	2.5
	3	0.0		4	4.5		16	5.1		12	4.5		38	0.4
	4	0.0		5	0.0	IC503	1	0.2		13	0.0		39	5.5
	5	5.2		6	0.0		2	0.0		14	0.0		40	P
	6	0.0		7	5.1		3	0.0	IC508	1	4.5		41	P
	7	0.0		8	0.0		4	0.0		2	5.2		42	P
	8	5.2		9	0.0		5	5.1		3	4.5		43	P
	9	5.1		10	0.0		6	0.2		4	0.0		44	0.4
	10	0.0		11	0.0		7	0.3		5	0.6	IC512	1	0.0
	11	0.0		12	5.1		8	5.1		6	0.0		2	2.5
	12	0.1		13	0.6	IC504	1	0.0		7	0.6		3	0.0
	13	0.1		14	0.0		2	0.2		8	5.1		4	1.0
	14	0.0		15	4.7		3	5.1	IC509	1	1.1		5	5.1
	15	4.7		16	5.1		4	4.4		2	1.5	IC522	1	– 0.9
	16	5.2	IC321	1	0.0		5	0.0		3	2.5		2	0.8
	17	0.0		2	4.7		6	0.0		4	0.0		3	0.9
	18	4.7		3	0.0		7	5.1		5	2.6		4	0.1
	19	0.0		4	0.4		8	0.0		6	1.4		5	0.1
	20	0.0		5	5.1		9	0.0		7	1.1		6	0.4
	21	0.0	IC322	1	0.4		10	0.0		8	5.1		7	– 5.0
	22	0.0		2	0.4		11	0.0	IC510	1	3.8		8	– 4.7
	23	0.0		3	2.3		12	5.1		2	2.5		9	4.8
	24	0.0		4	0.0		13	0.7		3	0.0		10	4.8
	25	0.0		5	1.9		14	0.0		4	5.1		11	– 4.6
	26	0.0		6	0.1		15	3.7		5	5.1		12	4.2
	27	0.0		7	0.1		16	5.1	IC511	1	2.2		13	– 0.9
	28	5.2		8	0.0	IC505	1	0.0		2	2.0		14	5.1
	29	0.2		9	3.6		2	0.1		3	0.0	IC523	1	– 1.8
	30	0.0		10	0.0		3	0.0		4	0.0		2	0.0
	31	0.0		11	0.0		4	0.1		5	5.1		3	0.0
	32	0.0		12	0.4		5	0.0		6	0.0		4	– 5.0
	33	0.0		13	0.0		6	0.1		7	5.1		5	– 1.0
	34	5.0		14	0.0		7	0.0		8	5.1		6	0.0
	35	0.0		15	1.0		8	0.4		9	0.0		7	4.8
	36	0.0		16	1.0		9	4.4		10	0.6		8	5.1
	37	0.0		17	5.1		10	0.4		11	0.0			
	38	0.0		18	0.0					12	0.0			
	39	5.2		19	2.4					13	5.1			
	40	0.0		20	5.1					14	5.2			

— DIAGRAM (3/3) —



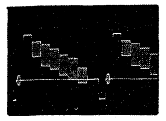
FROM 6 0 CN2 TBC-1
FROM 0 2 MOTHER-2 CN1 CN1-14A
14A L:AFC
FROM 4 1 AVM/ONSC
FROM 0 2 MOTHER-2 CN1 CN1-5A
5A L:SEARCH
FROM 0 2 MOTHER-2 CN1 CN1-14B
14B L:H SPEED
2/3 Y SP
2/3 Y SH
IC502 TC74HC221AF
IC503 TC4W53F
IC504 TC74HC221AF
IC505 SN7486NS
IC14 μPC78L05T
IC506 RC4560M
Q501
IC507 μPC319G2
Q502
IC15 NS278L12M
K513
K514 (R501)
VIDEO PHS (X) 13A
VIDEO PHS (G) 13B
CN1 TO 0 2 MOTHER-2 CN1-13A, B
To 6 3 CN4 SUBPANEL
SW1-3
IC509 SN75158PS
FROM 6 0 CN1 TBC-1
L:SEARCH 2/3
FROM 0 2 MOTHER-2 CN1 CN1-27A, B
27A W CLK
27B W CLK B
To 6 0 CN1 TBC-1
15B AFC 14.2M B
15A AFC 14.2M
IC510 TC7S32F
IC511 JCL0005
JCL0005
IC512 TC7S32F
IC508 TC7W04F
IC16 μPC78L05T
CXO28M 2/3
TP41
TP42
GND6
GND7
SW1-4
Q514
H REF (X) 17A
H REF (G) 17B
CN1 TO 0 2 MOTHER-2 CN1-13A, B
To 6 0 CN2 TBC-1
IC522 TC4069UBF
Q508
Q510
IC523 TC4W66F
TP46
IC524 μPC4074G2
IC19 μPC78L05T
Q512
Q513
IC525 TC4WU04F
IC20 μPC78L05T
+15 V 1/3
+7.5V 1/3, 2/3
GND 1/3, 2/3
FROM 0 2 MOTHER-2 CN1 CN1-24A, B
24A AFC FH (X)
24B AFC FH (G)
FROM 6 0 CN1 TBC-1
D502 DAP202K
Q509
Q511
TP48
D503 1SV68
D504 1SV68
L1 PGZ01563-3R3
GND8
-12V 2/3
- 5V 2/3
K502
6 2 TBC-3

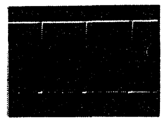
– DC
SYMB
IC524
IC525
TR
Q101
Q102
Q103
Q105
Q113
Q114
Q115
Q116
Q117
Q118
Q119
Q120

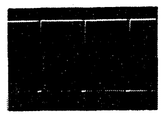

CN1 TO 8 2 MOTHER-2
CN1-13A, B
VIDEO PHS (X) 13A
VIDEO PHS (G) 13B
K513
K514 (R501)
To 8 3 CN4 SUBPANEL
IC14 μPC78L05T
IC596 RC4560M
Q501
IC507 μPC319G2
Q502
IC15 M5278L12M
IC508 TC7W04F
IC16 μPC78L05T
CX028M 2/3
TP42
K510 (R534)
CN1 TO 8 2 MOTHER-2
CN1-13A, B
H REF (X) 17A
H REF (G) 17B
K512
To 6 0 CN2 TBC-1
GND7
IC19 μPC78L05T
Q512
Q513
IC525 TC4WU04F
IC20 μPC78L05T
+15 V 1/3
+7.5V 1/3, 2/3
GND 1/3, 2/3
TP48
D503 1SV68
D504 1SV68
L1 PGZ01563-3R3
K503 (R527)
GND8
- 5V 2/3
K502
-12V 2/3
6 2 TBC-3
E
F
G

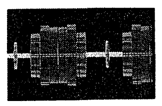
- DC voltage (3/3) - (TBC 3)

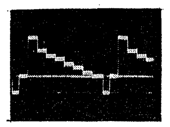
SYMBOL No.		PB	SYMBOL No.		PB	SYMBOL No.		PB
IC524	1	0.0	Q121	G	1.0	**CONNECTOR**		
	2	0.0		D	5.1	CN1	1AB	0.0
	3	0.0		S	0.0		2AB	0.0
	4	12.2	Q301	B	0.1		3AB	7.9
	5	– 1.7		C	–12.1		4AB	14.7
	6	– 1.0		E	0.7		5A	6.0
	7	– 1.0	Q302	B	0.0		5 B	0.0
	8	0.0		C	–12.2		6AB	–14.9
	9	0.0		E	0.6		7A	5.1
	10	0.0	Q303	B	– 2.2		7 B	0.0
	11	–12.2		C	4.3		8A	5.1
	12	0.0		E	– 2.8		8 B	0.0
	13	0.0	Q304	B	4.3		9A	5.1
	14	0.0		C	– 1.1		9 B	0.0
IC525	1	0.0		E	5.0		10A	1.5
	2	2.4	Q305	B	– 1.0		10 B	1.5
	3	2.5		C	–12.1		11A	3.5
	4	0.0		E	– 0.4		11 B	0.8
	5	2.5	Q306	B	2.8		12A	0.0
	6	2.6		C	5.1		12 B	0.0
	7	5.1		E	2.1		13A	2.9
	8	5.1	Q312	B	2.1		13 B	0.0
TRANSISTOR				C	0.0		14A	5.1
Q101	B	6.2		E	2.8		14 B	3.8
	C	0.0	Q313	B	2.8		15A	1.4
	E	6.9		C	5.1		15 B	1.5
Q102	B	0.1		E	2.1		16A	2.4
	C	0.0	Q501	B	5.5		16 B	5.1
	E	0.7		C	0.4		17A	0.0
Q103	B	3.2		E	6.1		17 B	0.0
	C	12.1	Q502	B	5.7		18A	5.1
	E	2.6		C	0.4		18 B	0.0
Q105	B	2.5		E	6.1		19A	4.7
	C	12.1	Q508	B	3.8		19 B	0.0
	E	1.9		C	3.8		20A	3.4
Q113	B	2.7		E	4.4		20 B	0.0
	C	5.1	Q509	B	– 3.6		23A	0.1
	E	2.0		C	– 3.6		23 B	0.0
Q114	B	4.2		E	– 4.2		24A	1.9
	C	9.4	Q510	B	3.8		24 B	0.0
	E	3.6		C	– 1.8		25A	0.0
Q115	G	0.0		E	4.4		25 B	0.0
	D	4.7	Q511	B	– 3.6		26A	0.1
	S	0.0		C	– 1.8		26 B	0.1
Q116	G	5.1		E	– 4.2		27A	1.6
	D	0.1	Q512	B	– 1.2		27 B	1.5
	S	0.0		C	5.1			
Q117	G	5.1		E	– 1.7			
	D	0.0	Q513	B	– 1.7			
	S	0.0		C	5.1			
Q118	B	7.9		E	– 2.1			
	C	0.6	Q514	G	3.8			
	E	7.9		D	0.0			
Q119	B	0.0		S	0.0			
	C	7.9						
	E	0.0						
Q120	1C	0.9						
	2C	5.1						
	3B	0.9						
	4E	0.0						
	5B	0.5						

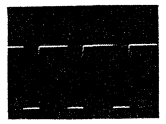

TP1 0.96 Vp-p

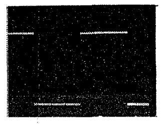

TP2 5 Vp-p
TP6 5 Vp-p
TP24 5.1 Vp-p
TP25 5.0 Vp-p
(15.625 kHz)

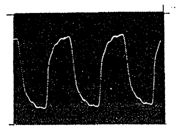

TP3 5Vp-p
TP4 1.5 Vp-p
(50 Hz)

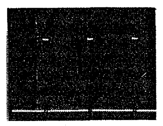

TP5 0.1 Vp-p

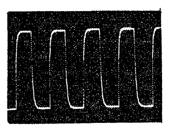

TP21 1.6 Vp-p

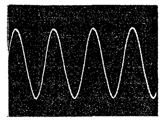

TP26 4.4 Vp-p
(15.625 kHz)


TP30 5 Vp-p
(25 Hz)


TP41 3.6 Vp-p
(14.2 MHz)


TP42 5.0 Vp-p
(15.625 kHz)

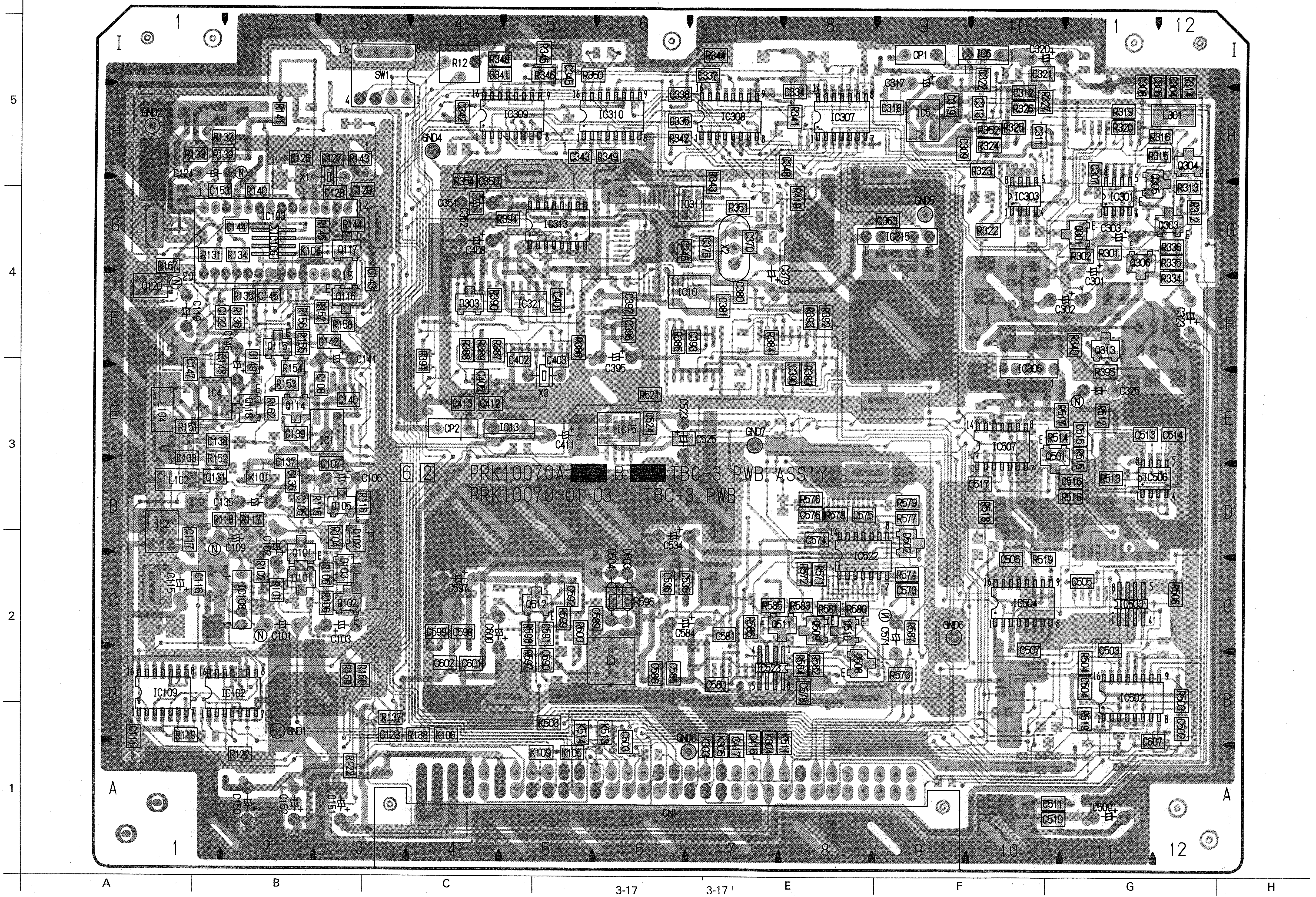

TP51 5.2 Vp-p
(4.43 MHz)

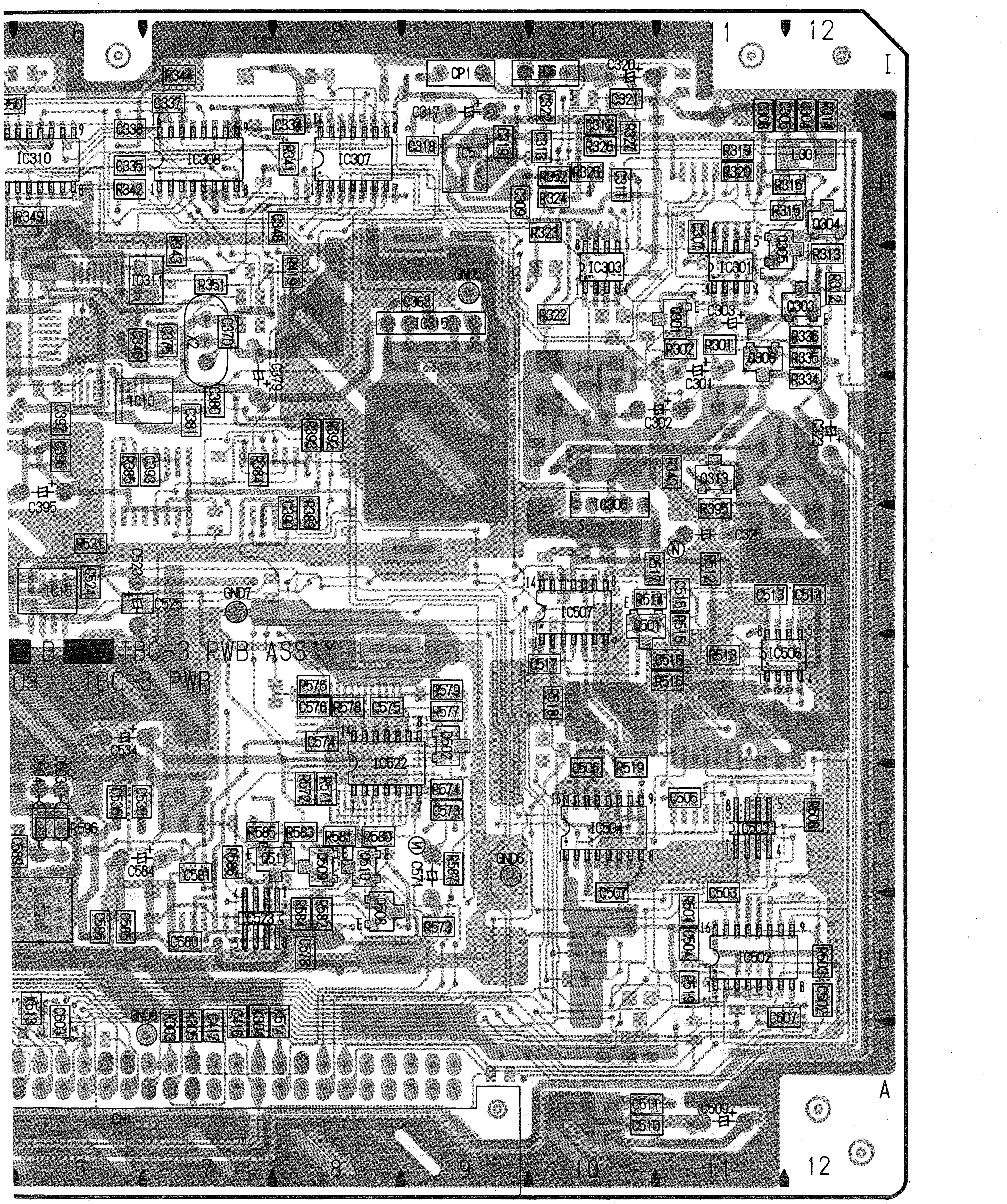

TP50 0.42 Vp-p
(4.43 MHz)

Note:
Waveforms observed at TP1—TP7, TP50 TP51 are those of color bar signal input to the EXT. REF terminal.

3.9 TBC-3 CIRCUIT BOARD

— Rear —


PRK10070A B TBC-3 PWB ASS'Y
PRK10070-01-03 TBC-3 PWB
CN1
SW1
GND1
GND2
GND4
GND5
GND6
GND7
GND8
CP1
CP2
IC1
IC2
IC4
IC5
IC6
IC10
IC13
IC15
IC102
IC103
IC108
IC109
IC301
IC303
IC306
IC307
IC308
IC309
IC310
IC311
IC313
IC315
IC321
IC502
IC503
IC504
IC506
IC507
IC522
IC523
X1
X2
X3
L1
L102
L104
L301
6
5
4
3
2
1
A
B
C
D
E
F
G
H

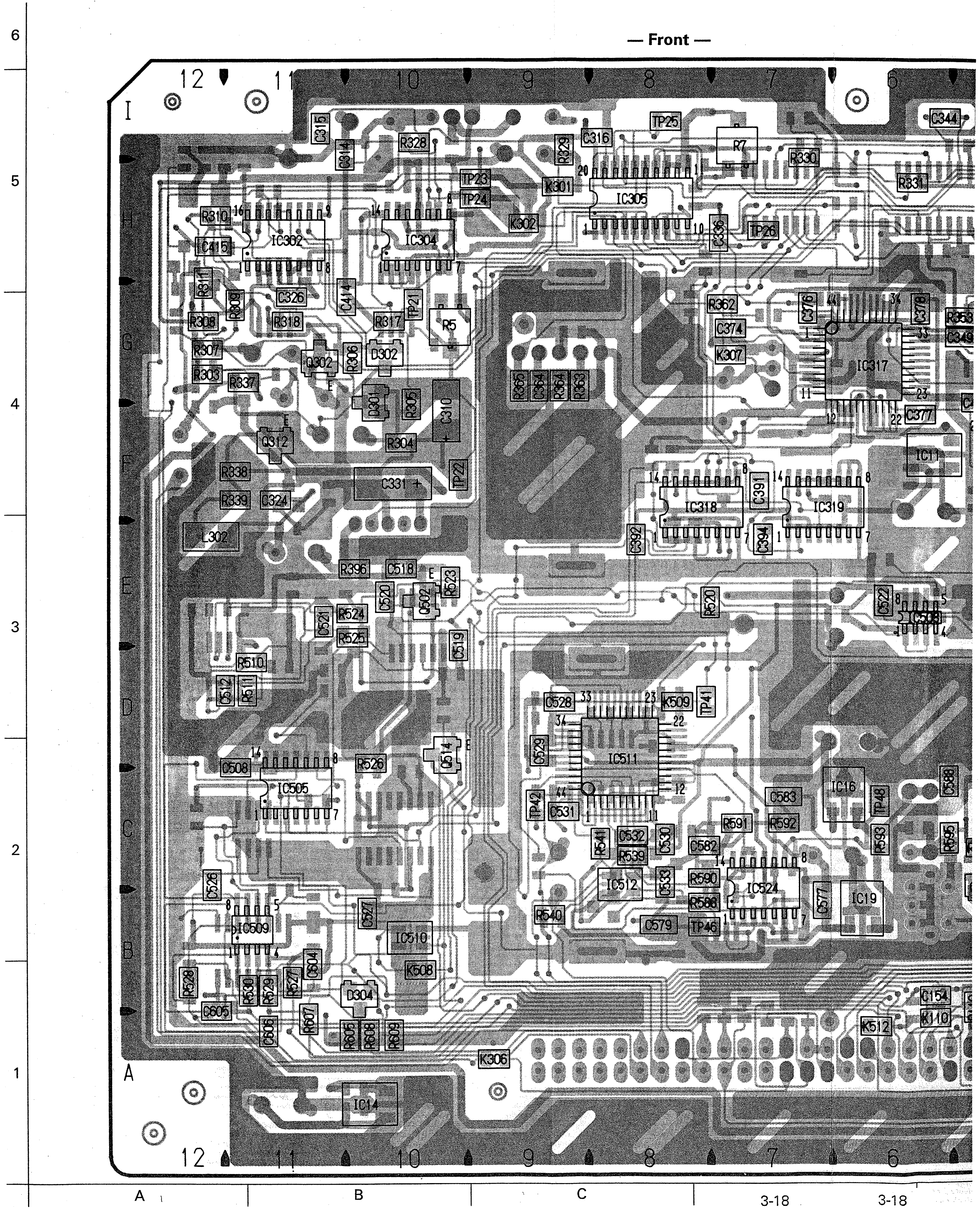

6
7
8
9
10
11
12
I
H
G
F
E
D
C
B
A
TBC-3 PWB ASS'Y
TBC-3 PWB
CP1
IC5
IC6
IC10
IC15
IC301
IC303
IC306
IC307
IC308
IC310
IC311
IC315
IC502
IC503
IC504
IC506
IC507
IC522
IC528
Q301
Q303
Q304
Q305
Q306
Q313
Q501
Q508
Q509
Q510
Q511
X2
L1
L301
GND5
GND6
GND7
GND8
CN1
R344
C337
R349
R351
C363
C525
R521
C534
C584
R596
C509
C510
C511
C607
E
F
G
H

— TBC-3 <62> DC voltage (2/2) —

SYMBOL	No.	PB
IC525	4 5 6 7 8	0.0 2.6 2.6 5.1 5.1
IC527	1 2 3 4 5 6 7 8	. . . .
TRANSISTOR		
Q101	B C E	6.2 0.0 6.8
Q102	B C E	0.1 0.0 0.8
Q103	B C E	3.2 12.0 2.6
Q105	B C E	2.6 12.0 2.0
Q113	B C E	2.7 5.0 2.1
Q114	B C E	4.2 9.2 3.5
Q115	D G S	4.6 0.0 0.0
Q116	D G S	0.2 5.0 0.0
Q117	D G S	0.0 5.0 0.0
Q118	B C E	7.6 0.6 7.6
Q119	B C E	0.0 7.5 0.0
Q301	B C E	0.1 -12.1 0.7
Q302	B C E	0.0 0.1 0.7
Q303	B C E	-2.2 4.3 -2.8
Q304	B C E	4.3 -1.1 4.9
Q305	B C E	-1.0 -11.9 -0.4
Q306	B C E	2.7 5.0 2.1

SYMBOL	No.	PB
Q308	B C E	4.1 4.1 4.5
Q309	B C E	4.1 0.0 4.5
Q310	B C E	-3.8 -3.8 -4.3
Q311	B C E	-4.0 -0.1 -4.4
Q312	B C E	2.1 0.0 2.7
Q313	B C E	2.7 5.1 2.1
Q501	B C E	5.4 0.7 6.0
Q502	B C E	5.4 0.0 6.0
Q508	B C E	4.1 4.1 4.5
Q509	B C E	-3.8 -3.8 -4.3
Q510	B C E	4.1 0.0 4.5
Q511	B C E	-4.0 -0.1 -4.4
Q512	B C E	-1.2 5.1 -1.5
Q513	B C E	-1.6 5.1 -2.0
Q514	D G S	0.1 3.6 0.0

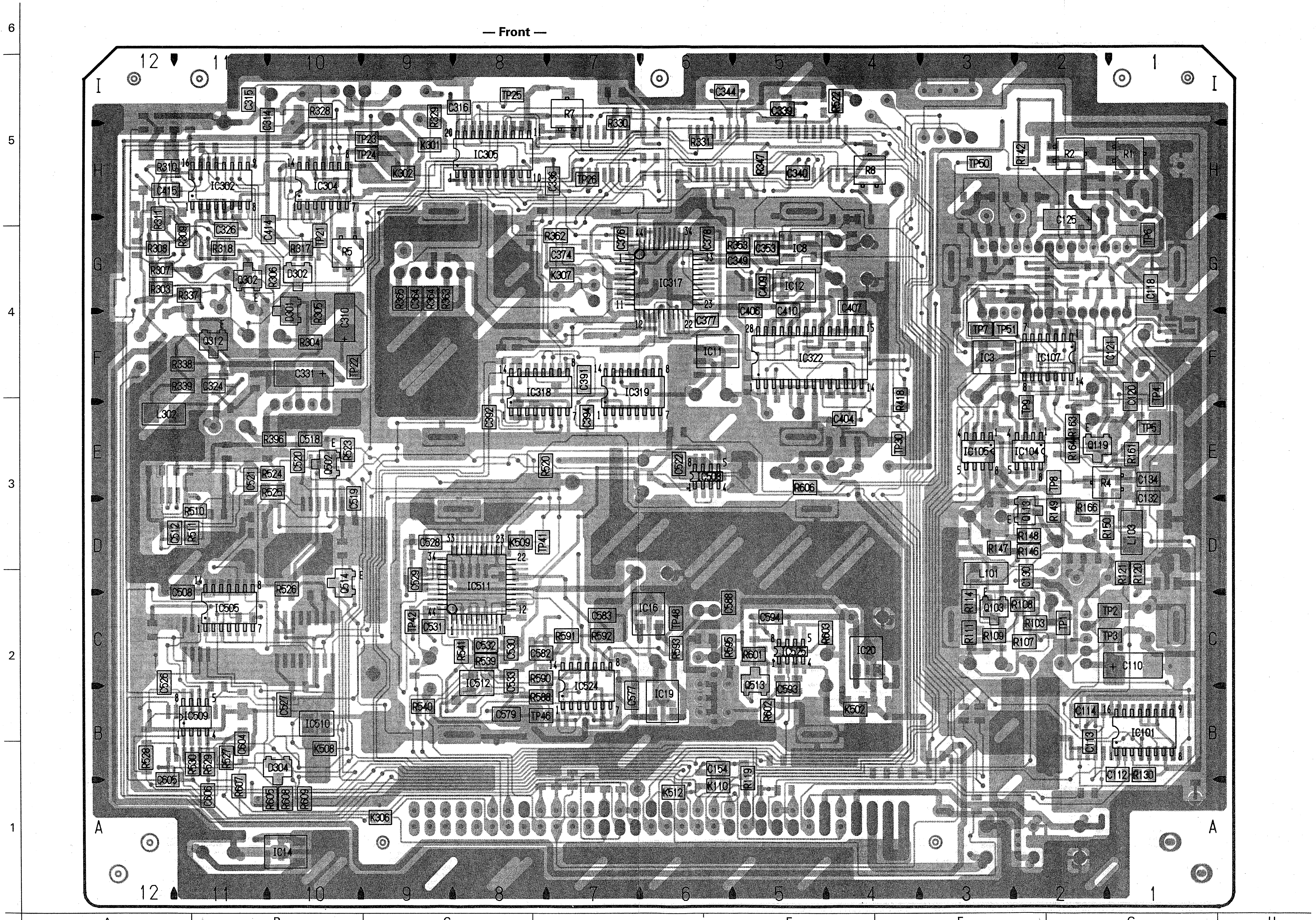
SYMBOL	No.	PB
CONNECTOR		
CN1	12A 12B	0.0 0.0
	11A	0.2
	16B	1.1
	5B 7B	0.0 0.0
	9A 9B	5.1 0.0
	11B	0.1
	8A 8B	5.1 0.0
	10A 10B 4A 4B 3A 3B 2A 2B 1A 1B 6A 6B	2.6 1.2 15.1 15.1 7.5 7.5 0.0 0.0 0.0 0.0 -15.1 -15.1
	25A 25B	0.0 0.0
	20A 20B	3.6 0.0
	26A 26B	0.2 0.1
	7A 18A 18B 19A 19B	5.0 5.0 0.0 4.7 0.0
	23A 23B	0.3 0.0
	16A	0.0
	14A	3.6
	5A	4.7
	14B	4.1
	27A 27B	0.9 0.8
	15B 15A	1.1 1.1
	24A 24B	2.0 0.0
	13A 13B	3.5 0.0
	17A 17B	0.6 0.0


— Front —
6
5
4
3
2
1
A
B
C
I
H
G
F
E
D
12
11
10
9
8
7
C315
C314
R328
R329
C316
TP25
R7
R330
C344
TP23
TP24
K301
IC305
R331
R310
IC302
IC304
K302
C336
TP26
C415
R311
R309
C326
C414
TP21
R308
R318
R317
R5
R362
C376
C378
R363
C374
C349
R307
Q302
R306
D302
K307
IC317
R303
R365
C364
R364
R363
R337
D301
R305
C310
C377
Q312
R304
IC11
R338
TP22
C331
IC318
C391
IC319
R339
C324
C392
C394
L302
R396
C518
R523
R520
C522
C520
Q502
IC508
C521
R524
R525
C519
R510
C528
K509
TP41
C512
R511
IC511
C529
Q514
C508
IC505
R526
IC16
C583
C588
TP42
C531
R591
R592
TP48
R541
C532
C530
C582
R593
R595
R539
C526
IC512
C533
R590
IC524
C577
IC19
R588
C597
R540
C579
TP46
IC509
IC510
C604
K508
R528
R530
R529
R527
D304
C154
C605
C606
R607
R605
R608
R609
K110
K512
K306
IC14

A

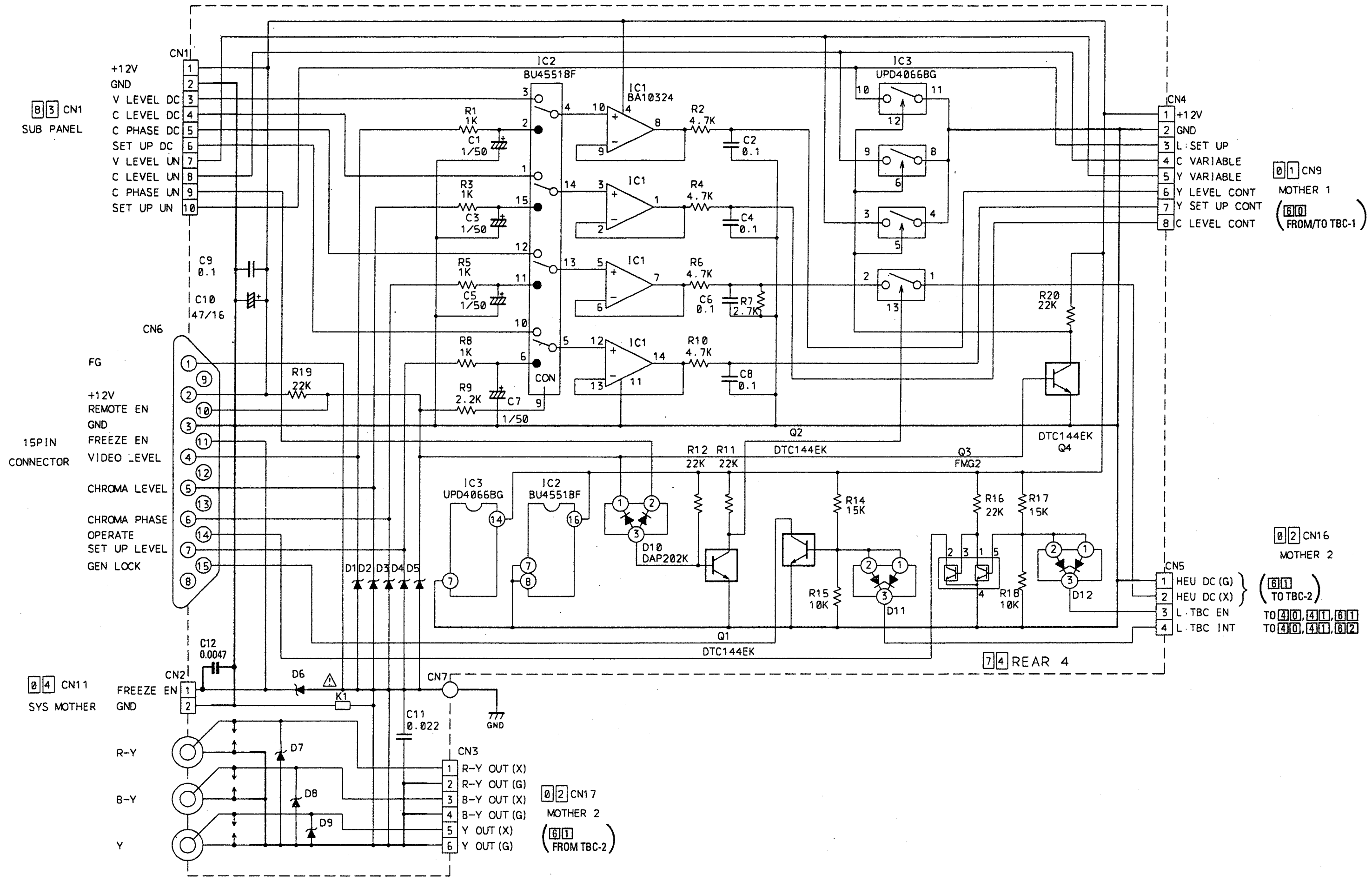
B

C

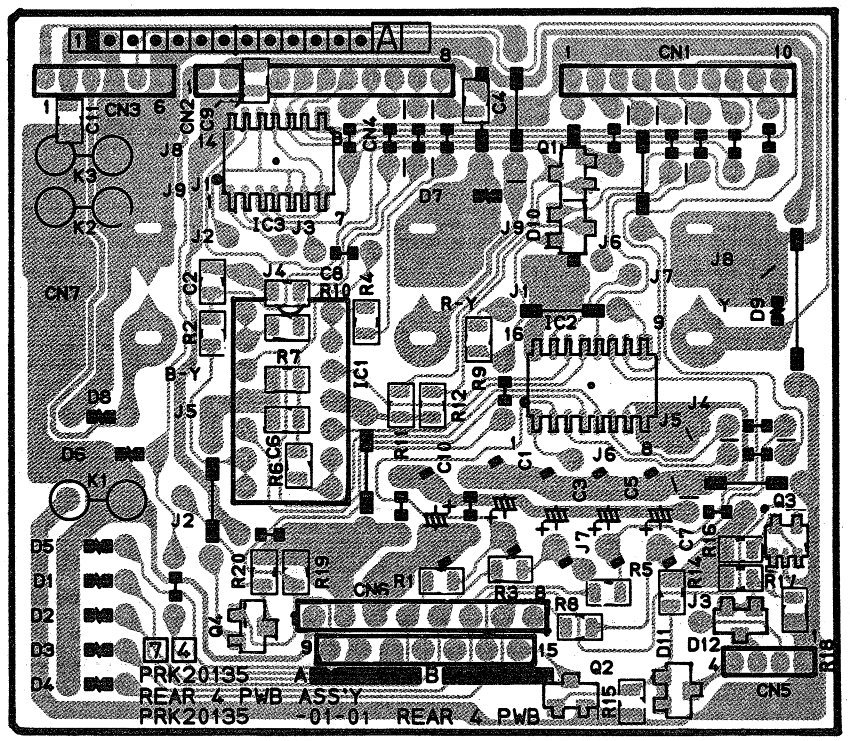

— Front —
6
5
4
3
2
1
12
11
10
9
8
7
6
5
4
3
2
1
I
H
G
F
E
D
C
B
A
C315
C314
R328
R329
C316
TP25
R7
R330
C344
C339
R332
TP23
TP24
K301
IC305
K302
C336
TP26
R331
R347
C340
R8
TP50
R142
R2
R1
R310
IC302
IC304
C415
C125
TP6
R311
R309
C326
C414
TP21
R5
R362
C376
C378
R353
C353
IC8
R308
R318
R317
C374
C349
R307
Q302
R306
D302
K307
IC317
C409
IC12
C118
R303
R337
D301
R305
C310
R365
C364
R364
R363
C406
C410
C407
C377
Q312
R304
TP7
TP51
C121
IC11
IC322
IC3
IC107
R338
C331
TP22
R339
C324
IC318
C391
IC319
R418
C120
TP4
L302
C392
C394
C404
TP9
R396
C518
R523
R163
TP5
C520
Q502
TP30
IC105
IC104
R164
Q119
R161
C521
R524
R520
C522
IC508
R4
C134
R525
C519
R606
TP8
Q113
R149
R166
C132
R510
C512
R511
C528
IC511
K509
TP41
R148
R150
L103
R147
R146
C529
L101
C130
R121
R120
C514
C508
IC505
R526
C583
IC16
TP48
C588
R114
Q103
R108
TP2
TP1
C594
R103
TP42
C531
R591
R592
R593
R595
R603
IC20
R111
R109
R107
TP3
R541
C532
C530
C582
R601
IC525
C110
C526
R539
IC512
C533
R590
IC524
C577
IC19
Q513
C593
R588
R602
K502
C114
C527
IC509
IC510
R540
C579
TP46
C113
IC101
C604
K508
R528
R530
R529
R527
D304
C154
R119
C112
R130
C605
C606
R607
R605
R608
R609
K512
K110
K306
IC14
A
B
C
D
E
F
G
H

3.10 REAR 4 SCHEMATIC DIAGRAM and CIRCUIT BOARD

— SCHEMATIC DIAGRAM —


CN1
+12V
GND
V LEVEL DC
C LEVEL DC
C PHASE DC
SET UP DC
V LEVEL UN
C LEVEL UN
C PHASE UN
SET UP UN
8 3 CN1
SUB PANEL
IC2
BU4551BF
IC1
BA10324
IC3
UPD4066BG
R1 1K
C1 1/50
R2 4.7K
C2 0.1
R3 1K
C3 1/50
R4 4.7K
C4 0.1
R5 1K
C5 1/50
R6 4.7K
C6 0.1
R7 2.7K
R8 1K
R9 2.2K
C7 1/50
R10 4.7K
C8 0.1
C9 0.1
C10 47/16
R19 22K
R20 22K
CN6
FG
+12V
REMOTE EN
GND
FREEZE EN
VIDEO LEVEL
CHROMA LEVEL
CHROMA PHASE
OPERATE
SET UP LEVEL
GEN LOCK
15PIN CONNECTOR
CN4
+12V
GND
L SET UP
C VARIABLE
Y VARIABLE
Y LEVEL CONT
Y SET UP CONT
C LEVEL CONT
8 1 CN9
MOTHER 1
(8 8 FROM/TO TBC-1)
Q2 DTC144EK
Q3 FMG2
Q4 DTC144EK
R12 22K
R11 22K
R14 15K
R16 22K
R17 15K
R15 10K
R18 10K
D10 DAP202K
D11
D12
D1 D2 D3 D4 D5
Q1 DTC144EK
CN5
HEU DC (G)
HEU DC (X)
L TBC EN
L TBC INT
0 2 CN16
MOTHER 2
(8 8 TO TBC-2)
TO 4 0, 4 1, 8 1
TO 4 0, 4 1, 8 2
7 4 REAR 4
C12 0.0047
CN2
FREEZE EN
GND
0 4 CN11
SYS MOTHER
D6
K1
CN7
C11 0.022
GND
R-Y
B-Y
Y
D7
D8
D9
CN3
R-Y OUT (X)
R-Y OUT (G)
B-Y OUT (X)
B-Y OUT (G)
Y OUT (X)
Y OUT (G)
0 2 CN17
MOTHER 2
(8 8 FROM TBC-2)

— CIRCUIT BOARD —

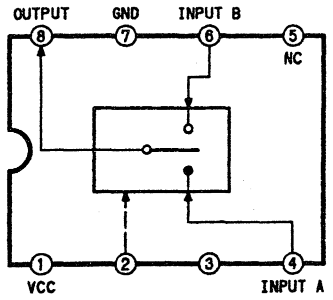

CN1
CN3
CN2
CN4
CN5
CN6
CN7
IC1
IC2
IC3
K1
K2
K3
Q1
Q2
Q3
Q4
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
J1
J2
J3
J4
J5
J6
J7
J8
J9
R-Y
B-Y
Y
7 4
PRK20135 A
REAR 4 PWB ASS'Y
PRK20135 -01-01 REAR 4 PWB

— DC voltage —

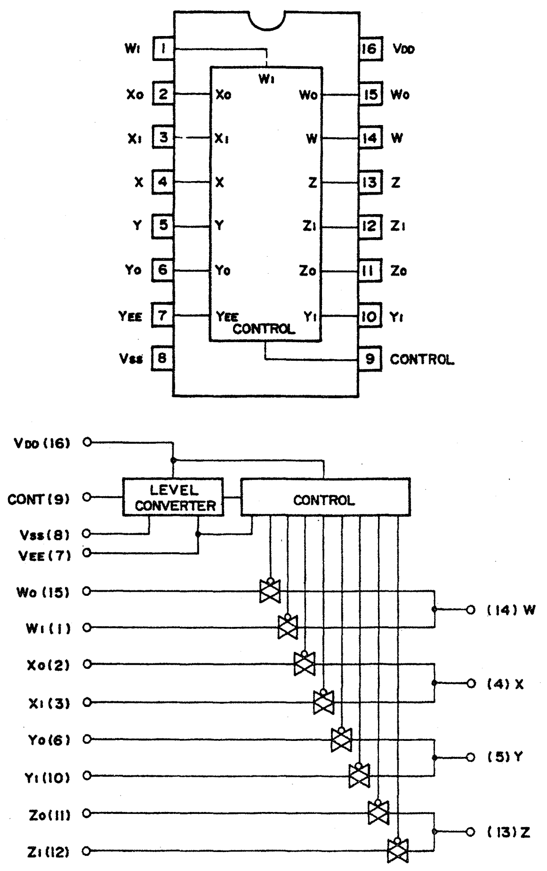
SYMBOL	No.	REC	PB
INTEGRATED CIRCUIT			
IC1	1		9.7
	2		9.7
	3		9.7
	4		0.0
	5		4.9
	6		4.9
	7		4.9
	8		2.6
	9		2.6
	10		2.6
	11		12.0
	12		5.1
	13		5.1
	14		5.1
IC2	1		2.6
	2		0.2
	3		9.7
	4		9.7
	5		4.9
	6		0.2
	7		0.0
	8		0.0
	9		12.0
	10		4.9
	11		0.1
	12		5.1
	13		5.1
	14		2.6
	15		0.2
	16		12.0
IC3	1		2.2
	2		1.9
	3		11.9
	4		11.9
	5		12.0
	6		12.0
	7		0.0
	8		11.8
	9		11.8
	10		12.4
	11		12.4
	12		12.0
	13		0.0
	14		11.9
TRANSISTOR			
Q1	B		0.0
	C		8.2
	E		8.1
Q2	B		0.7
	C		0.0
	E		0.0
Q3	1		8.0
	2		0.0
	3		8.0
	4		0.0
	5		1.0
Q4	B		.
	C		.
	E		.
CONNECTOR			
CN1	1		12.0
	2		0.0
	3		9.7
	4		2.6
	5		5.1
	6		4.9
	7		11.9
	8		11.8
	9		7.9
	10		12.4
CN2	1		5.0
	2		0.0
CN3	1		0.0
	2		0.0
	3		0.0
	4		0.0
	5		0.0
	6		0.0
CN4	1		12.0
	2		0.0
	3		12.4
	4		11.8
	5		12.0
	6		9.7
	7		4.9
	8		2.6
CN5	1		0.0
	2		2.2
	3		0.5
	4		0.1
CN6	1		0.3
	2		12.0
	3		0.0
	4		0.2
	5		0.2
	6		0.1
	7		0.2
	8		0.2
	9		0.2
	10		12.0
	11		5.0
	12		0.0
	13		0.0
	14		0.0
	15		0.0

3.11 IC BLOCK DIAGRAM

— AN6308S —
Analog Switch


OUTPUT
GND
INPUT B
8
7
6
5
NC
1
2
3
4
VCC
INPUT A

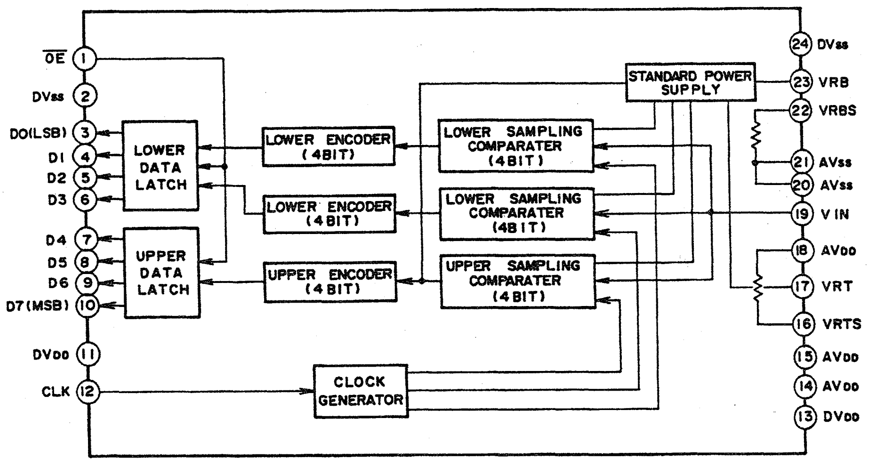
— BU4551BF —
Quad 2 Input Analog Multiplexer/Demultiplexer


W1 1
X0 2
X1 3
X 4
Y 5
Y0 6
YEE 7
VSS 8
16 VDD
15 W0
14 W
13 Z
12 Z1
11 Z0
10 Y1
9 CONTROL
W1
X0
X1
X
Y
Y0
YEE
W0
W
Z
Z1
Z0
Y1
CONTROL
VDD (16)
CONT (9)
VSS (8)
VEE (7)
W0 (15)
W1 (1)
X0 (2)
X1 (3)
Y0 (6)
Y1 (10)
Z0 (11)
Z1 (12)
LEVEL CONVERTER
CONTROL
(14) W
(4) X
(5) Y
(13) Z

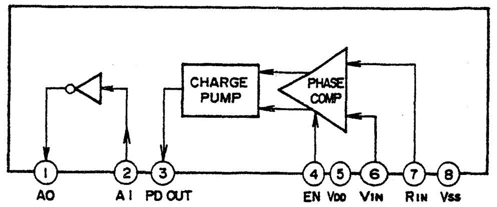
TRUTH TABLE

CONTROL	ON
0	W_0, X_0, Y_0, Z_0
1	W_1, X_1, Y_1, Z_1

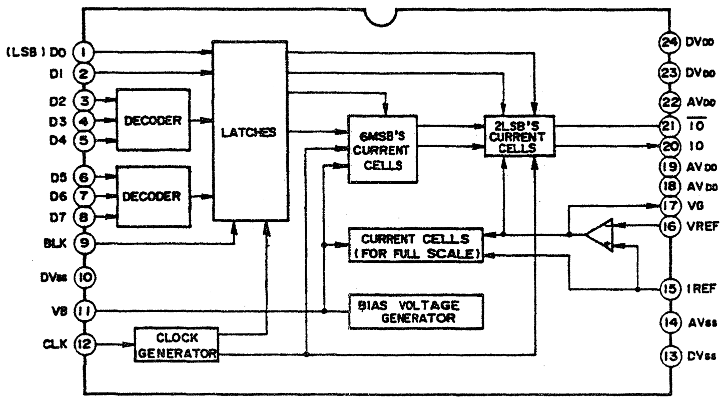
— CXD1175AM —
A/D Converter


OE 1
DVss 2
D0(LSB) 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7(MSB) 10
DVDD 11
CLK 12
24 DVss
23 VRB
22 VRBS
21 AVss
20 AVss
19 VIN
18 AVDD
17 VRT
16 VRTS
15 AVDD
14 AVDD
13 DVDD
LOWER DATA LATCH
UPPER DATA LATCH
LOWER ENCODER (4BIT)
LOWER ENCODER (4BIT)
UPPER ENCODER (4BIT)
LOWER SAMPLING COMPARATER (4BIT)
LOWER SAMPLING COMPARATER (4BIT)
UPPER SAMPLING COMPARATER (4BIT)
STANDARD POWER SUPPLY
CLOCK GENERATOR

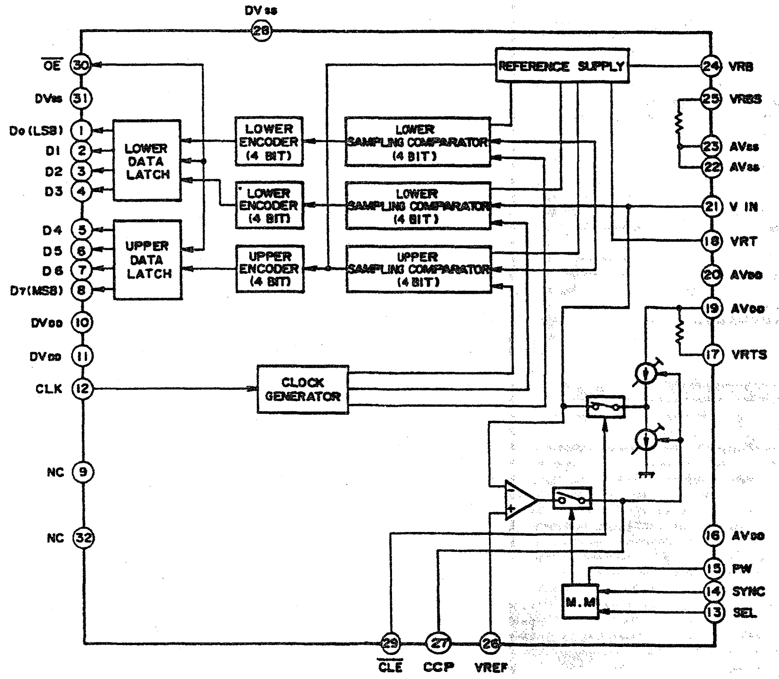
— CX23065A —
Phase Comparator


CHARGE PUMP
PHASE COMP
1 AO
2 AI
3 PD OUT
4 EN
5 VDD
6 VIN
7 RIN
8 VSS

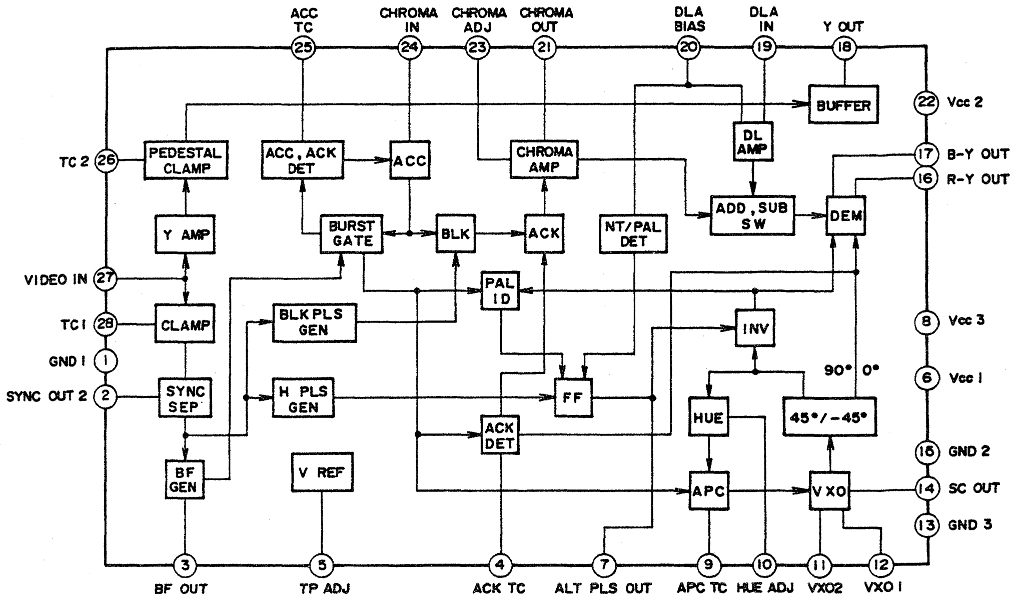
— CXD1171M —
D/A Converter


(LSB) D0 1
D1 2
D2 3
D3 4
D4 5
D5 6
D6 7
D7 8
BLK 9
DVss 10
VB 11
CLK 12
24 DVDD
23 DVDD
22 AVDD
21 IO
20 IO
19 AVDD
18 AVDD
17 VG
16 VREF
15 IREF
14 AVss
13 DVss
DECODER
DECODER
LATCHES
6MSB'S CURRENT CELLS
2LSB'S CURRENT CELLS
CURRENT CELLS (FOR FULL SCALE)
BIAS VOLTAGE GENERATOR
CLOCK GENERATOR

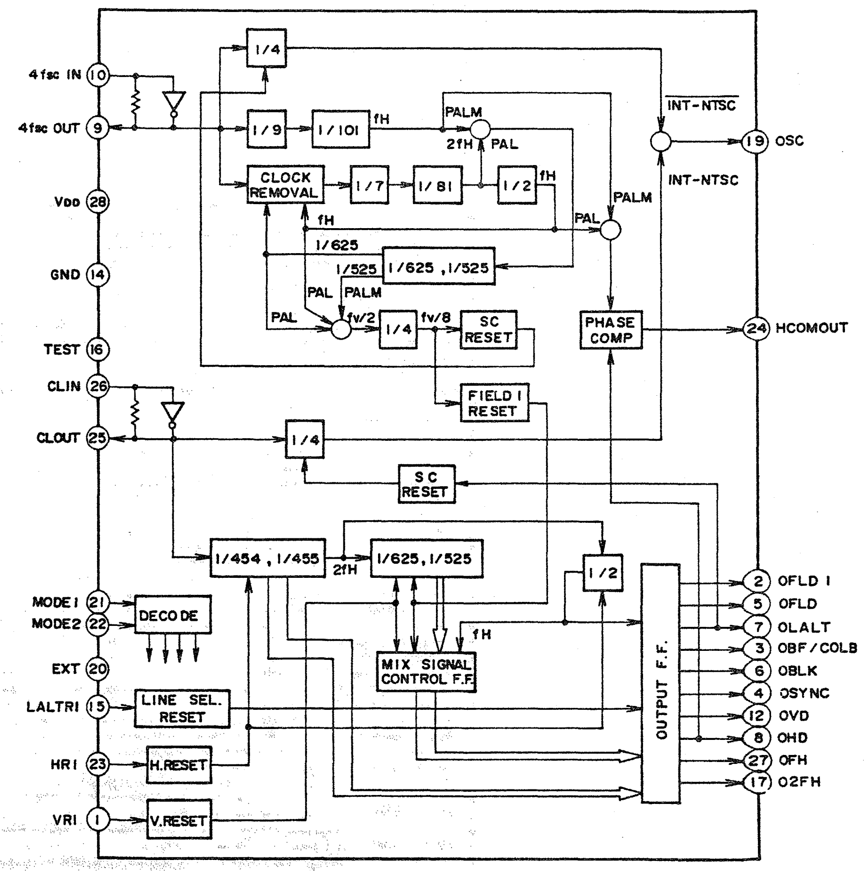
— CXD1176Q —
A/D Converter


DVss 28
OE 30
DVss 31
D0 (LSB) 1
D1 2
D2 3
D3 4
D4 5
D5 6
D6 7
D7(MSB) 8
DVDD 10
DVDD 11
CLK 12
NC 9
NC 32
24 VRB
25 VRBS
23 AVss
22 AVss
21 V IN
18 VRT
20 AVDD
19 AVDD
17 VRTS
16 AVDD
15 PW
14 SYNC
13 SEL
29 CLE
27 CCP
26 VREF
REFERENCE SUPPLY
LOWER DATA LATCH
UPPER DATA LATCH
LOWER ENCODER (4 BIT)
LOWER ENCODER (4 BIT)
UPPER ENCODER (4 BIT)
LOWER SAMPLING COMPARATOR (4 BIT)
LOWER SAMPLING COMPARATOR (4 BIT)
UPPER SAMPLING COMPARATOR (4 BIT)
CLOCK GENERATOR
M.M

— CXA1228S —
NTSC/PAL Decoder

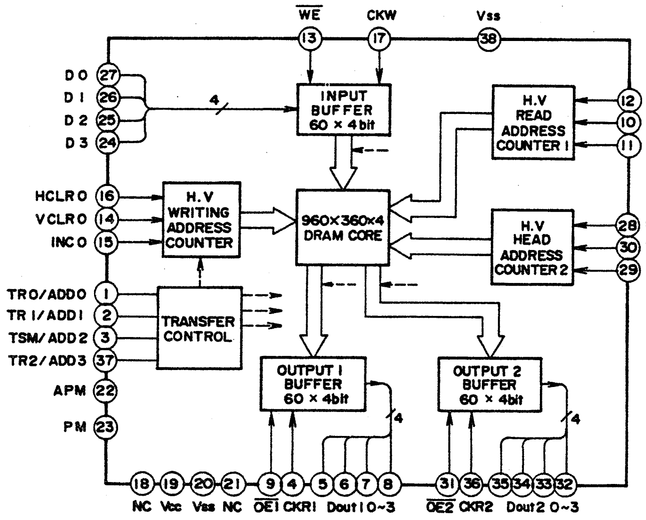

ACC TC 25
CHROMA IN 24
CHROMA ADJ 23
CHROMA OUT 21
DLA BIAS 20
DLA IN 19
Y OUT 18
22 Vcc 2
17 B-Y OUT
16 R-Y OUT
8 Vcc 3
6 Vcc 1
15 GND 2
14 SC OUT
13 GND 3
TC 2 26
VIDEO IN 27
TC1 28
GND 1 1
SYNC OUT 2 2
3 BF OUT
5 TP ADJ
4 ACK TC
7 ALT PLS OUT
9 APC TC
10 HUE ADJ
11 VXO2
12 VXO1
PEDESTAL CLAMP
ACC, ACK DET
ACC
CHROMA AMP
BUFFER
DL AMP
ADD, SUB SW
DEM
Y AMP
BURST GATE
BLK
ACK
NT/PAL DET
PAL ID
CLAMP
BLK PLS GEN
INV
SYNC SEP
H PLS GEN
FF
90° 0°
HUE
45°/-45°
ACK DET
BF GEN
V REF
APC
VXO

— CXD1217M —
Sync Generator


4fsc IN 10
4fsc OUT 9
VDD 28
GND 14
TEST 16
CLIN 26
CLOUT 25
MODE1 21
MODE2 22
EXT 20
LALTRI 15
HRI 23
VRI 1
19 OSC
24 HCOMOUT
2 OFLD1
5 OFLD
7 OLALT
3 OBF/COLB
6 OBLK
4 OSYNC
12 OVD
8 OHD
27 OFH
17 O2FH
1/4
1/9
1/101
fH
PALM
2fH
PAL
CLOCK REMOVAL
1/7
1/81
1/2
fH
INT-NTSC
INT-NTSC
PALM
PAL
fH
1/625
1/525
1/625, 1/525
PAL
PALM
PAL
fv/2
1/4
fv/8
SC RESET
PHASE COMP
FIELD1 RESET
1/4
SC RESET
1/454, 1/455
2fH
1/625, 1/525
1/2
DECODE
MIX SIGNAL CONTROL F.F.
fH
LINE SEL. RESET
H.RESET
V.RESET
OUTPUT F.F.

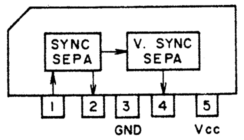
— CXK1206M —

Field Memory


WE
CKW
Vss
D0 27
D1 26
D2 25
D3 24
4
13
17
38
INPUT BUFFER 60 × 4bit
H.V READ ADDRESS COUNTER 1
12 HCLR1
10 VCLR1
11 INC1
HCLR0 16
VCLR0 14
INC0 15
H.V WRITING ADDRESS COUNTER
960×360×4 DRAM CORE
H.V HEAD ADDRESS COUNTER 2
28 HCLR2
30 VCLR2
29 INC2
TR0/ADD0 1
TR1/ADD1 2
TSM/ADD2 3
TR2/ADD3 37
TRANSFER CONTROL
APM 22
PM 23
OUTPUT 1 BUFFER 60 × 4bit
OUTPUT 2 BUFFER 60 × 4bit
18 19 20 21 9 4 5 6 7 8 31 36 35 34 33 32
NC Vcc Vss NC OE1 CKR1 Dout1 0~3 OE2 CKR2 Dout2 0~3

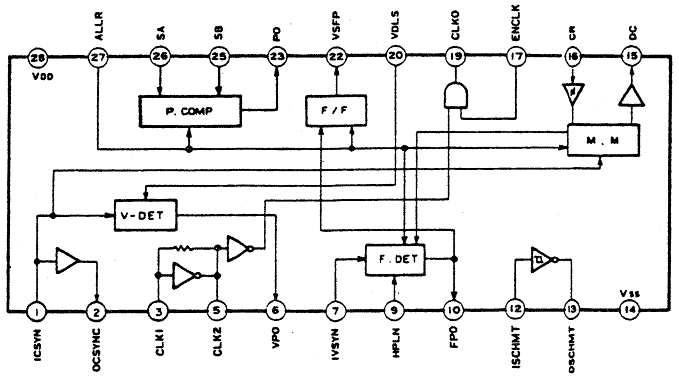
— LA7213 —

Sync Separator


SYNC SEPA
V. SYNC SEPA
1 2 3 4 5
GND
Vcc

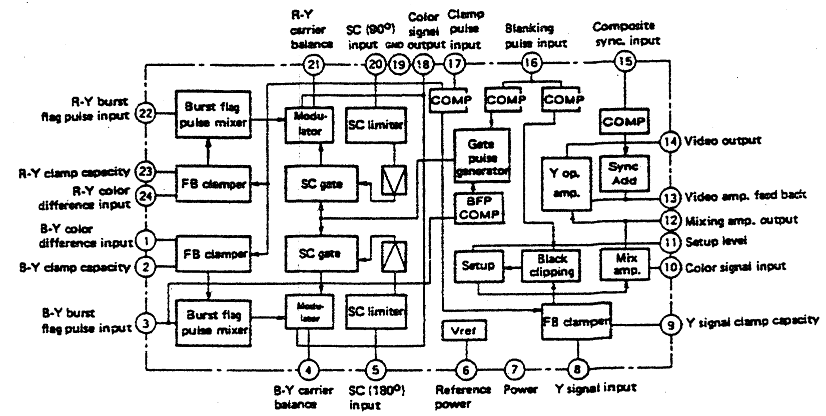
— MN50005JVES —

Frame Detector


ALLR
SA
SB
PO
VSFP
VDLS
CLKO
ENCLK
CR
DC
28 27 26 25 23 22 20 19 17 16 15
VDD
P. COMP
F / F
M . M
V-DET
F . DET
Vss
1 2 3 5 6 7 9 10 12 13 14
ICSYN
OCSYNC
CLK1
CLK2
VPO
IVSYN
HPLN
FPO
ISCHMT
OSCHMT

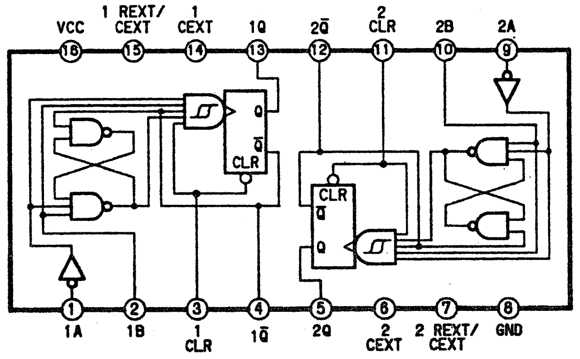
— M51272FP —

PAL Encoder


R-Y carrier balance
SC (90°) input
GND
Color signal output
Clamp pulse input
Blanking pulse input
Composite sync. input
21 20 19 18 17 16 15
R-Y burst flag pulse input 22
R-Y clamp capacity 23
R-Y color difference input 24
B-Y color difference input 1
B-Y clamp capacity 2
B-Y burst flag pulse input 3
Burst flag pulse mixer
FB clamper
Modu-lator
SC limiter
SC gate
COMP
Gate pulse generator
BFP COMP
Y op. amp.
Sync Add
Setup
Black clipping
Mix amp.
Vref
FB clamper
14 Video output
13 Video amp. feed back
12 Mixing amp. output
11 Setup level
10 Color signal input
9 Y signal clamp capacity
4 5 6 7 8
B-Y carrier balance
SC (180°) input
Reference power
Power
Y signal input

— SN74LS221NS —

Dual Monstable Multivibrators

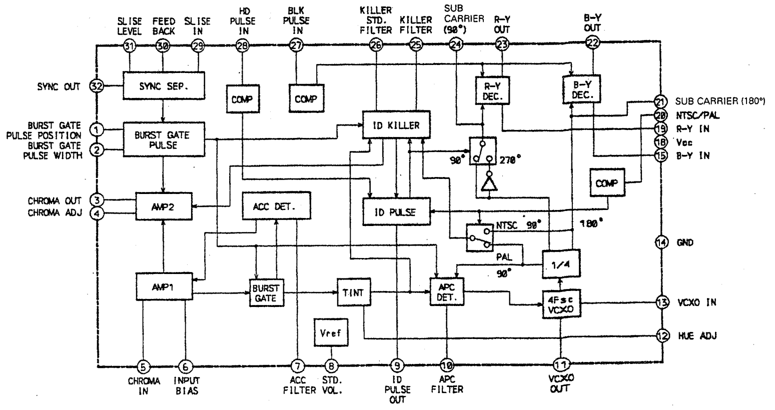

VCC
1 REXT/ CEXT
1 CEXT
1Q
2Q̄
2 CLR
2B
2A
16 15 14 13 12 11 10 9
Q
Q̄
CLR
1 2 3 4 5 6 7 8
1A
1B
1 CLR
1Q̄
2Q
2 CEXT
2 REXT/ CEXT
GND

TRUTH TABLE

INPUTS			OUTPUTS	
CLEAR	A	B	Q	Q̄
L	×	×	L	H
×	H	×	L	H
×	×	L	L	H
H	L	↑	⎍	⎎
H	↓	H	⎍	⎎
↑	L	H	⎍	⎎

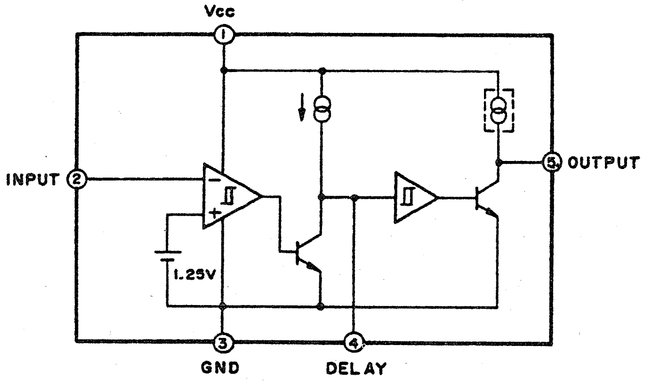
— M51279FP —

PAL DECODER


SLISE LEVEL
FEED BACK
SLISE IN
HD PULSE IN
BLK PULSE IN
KILLER STD. FILTER
KILLER FILTER
SUB CARRIER (90°)
R-Y OUT
B-Y OUT
31 30 29 28 27 26 25 24 23 22
SYNC OUT 32
BURST GATE PULSE POSITION 1
BURST GATE PULSE WIDTH 2
CHROMA OUT 3
CHROMA ADJ 4
SYNC SEP.
BURST GATE PULSE
COMP
ID KILLER
R-Y DEC.
B-Y DEC.
AMP2
ACC DET.
ID PULSE
AMP1
BURST GATE
TINT
APC DET.
1/4
4Fsc VCXO
Vref
90°
270°
NTSC 90°
180°
PAL
90°
21 SUB CARRIER (180°)
20 NTSC/PAL
19 R-Y IN
18 Vcc
15 B-Y IN
14 GND
13 VCXO IN
12 HUE ADJ
5 6 7 8 9 10 11
CHROMA IN
INPUT BIAS
ACC FILTER
STD. VOL.
ID PULSE OUT
APC FILTER
VCXO OUT

— M51957BL —

Voltage Detector/System Reset


Vcc
1
INPUT 2
5 OUTPUT
1.25V
3
4
GND
DELAY

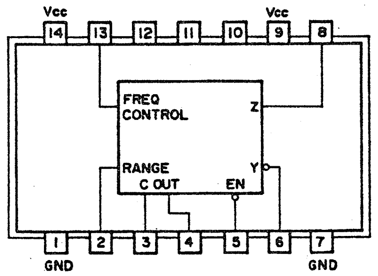
— SN74LS541NS —

Reference

TC74HC541AP/AF

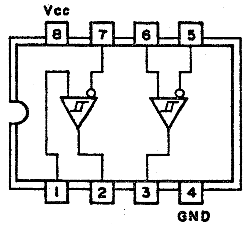
— SN74LS628NS —

Voltage-Controller OSC.


Vcc
Vcc
14 13 12 11 10 9 8
FREQ CONTROL
Z
RANGE
C OUT
EN
Y
1 2 3 4 5 6 7
GND
GND

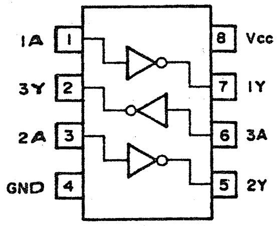
— SN75157PS —

Dual Receiver


Vcc
8 7 6 5
1 2 3 4
GND

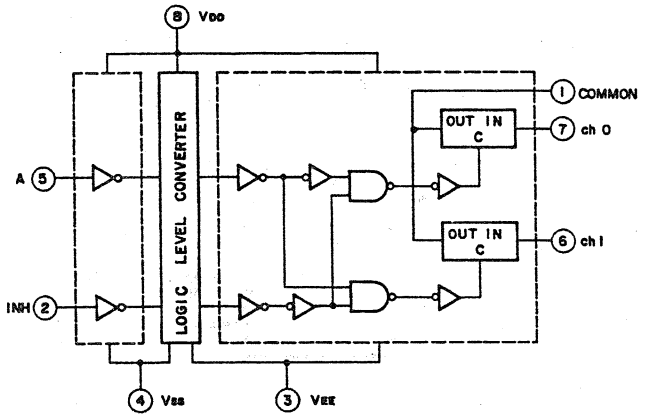
— TC7W04F —

Triple Inverter


1A 1
3Y 2
2A 3
GND 4
8 Vcc
7 1Y
6 3A
5 2Y

— TC4W53F —

2 Channel Multi Plexer/Demulti Plexer


8 VDD
1 COMMON
7 ch 0
6 ch 1
A 5
INH 2
LOGIC LEVEL CONVERTER
OUT IN C
OUT IN C
4 Vss
3 VEE

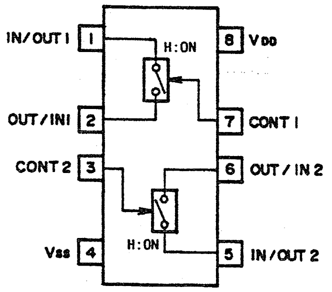
TRUTH TABLE

CONTROL	INPUT	ON
INH	A	CHANNEL
L	L	ch 0
L	H	ch 1
H	*	NONE

*Don't Care

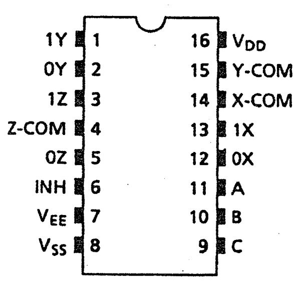
— TC4W66F —

Dual Bilateral Switch


IN/OUT 1 1
OUT/IN 1 2
CONT 2 3
Vss 4
8 VDD
7 CONT 1
6 OUT/IN 2
5 IN/OUT 2
H:ON
H:ON

— TC4053BF —

Triple 2-channel Multiplexer/Demultiplexer


1Y 1
0Y 2
1Z 3
Z-COM 4
0Z 5
INH 6
VEE 7
VSS 8
16 VDD
15 Y-COM
14 X-COM
13 1X
12 0X
11 A
10 B
9 C

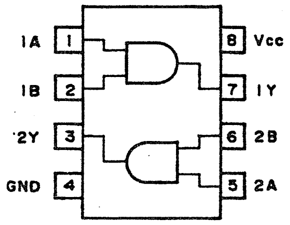
TRUTH TABLE

CONTROL INPUTS				"ON" CHANNEL		
INHIBIT	C△	B	A	TC4051BP TC4051BF	TC4052BP TC4052BF	TC4053BP TC4053BF
L	L	L	L	0	0X, 0Y	0X, 0Y, 0Z
L	L	L	H	1	1X, 1Y	1X, 0Y,0Z
L	L	H	L	2	2X, 2Y	0X, 1Y, 0Z
L	L	H	H	3	3X, 3Y	1X, 1Y, 0Z
L	H	L	L	4	–	0X, 0Y, 1Z
L	H	L	H	5	–	1X, 0Y, 1Z
L	H	H	L	6	–	0X, 1Y, 1Z
L	H	H	H	7	–	1X, 1Y, 1Z
H	*	*	*	NONE	NONE	NOTE

* Don't Care, △Except TC4052

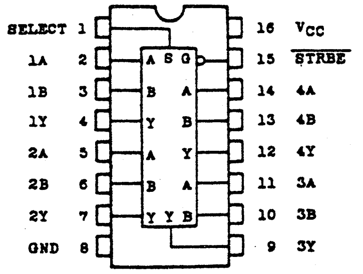
— TC7W08F —

Dual AND Gate


1A 1
1B 2
2Y 3
GND 4
8 Vcc
7 1Y
6 2B
5 2A

— TC74HC157AF —

Quad 2-Channel Multiplexer


SELECT 1
1A 2
1B 3
1Y 4
2A 5
2B 6
2Y 7
GND 8
16 Vcc
15 STRBE
14 4A
13 4B
12 4Y
11 3A
10 3B
9 3Y
A S G
B A
Y B
A Y
B A
Y Y B

(Top View)

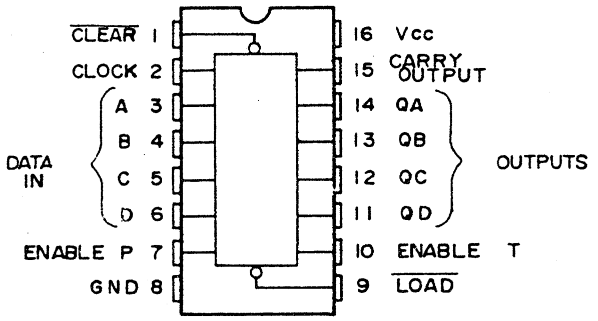
TRUTH TABLE

INPUTS				OUTPUT
STROBE	SELECT	A	B	Y
H	*	*	*	L
L	L	L	*	L
L	L	H	*	H
L	H	*	L	L
L	H	*	H	H

* Don't Care

— TC74HC163AF —

Synchronous Presettable 4-Bit Counter,
Binary Synchronous Clear


CLEAR 1
CLOCK 2
A 3
B 4
C 5
D 6
DATA IN
ENABLE P 7
GND 8
16 Vcc
15 CARRY OUTPUT
14 QA
13 QB
12 QC
11 QD
OUTPUTS
10 ENABLE T
9 LOAD

(TOP VIEW)

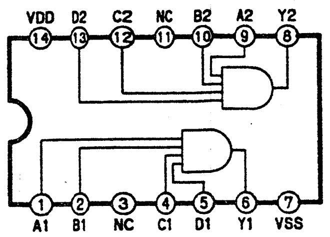
TRUTH TABLE

INPUTS					OUTPUTS				FUNCTION
CLR	LD	PE	TE	CK	Q_A	Q_B	Q_C	Q_D	
↓	*	*	*		L	L	L	L	REST TO "0"
H	L	*	*		A	B	C	D	PRESET DATA
H	H	*	L		NO CHANGE				NO COUNT
H	H	L	*		NO CHANGE				NO COUNT
H	H	H	H		COUNT UP				COUNT
*	*	*	*		NO CHANGE				NO COUNT

Note * : Don't Care
A, B, C, D : Logic Level of Data Inputs
Carry : $CARRY = TE \cdot Q_A \cdot Q_B \cdot Q_C \cdot Q_D$

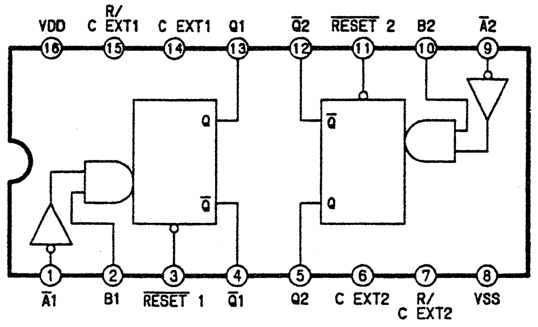
— TC74HC21AF —

Dual 4-Input AND Gate


VDD
D2
C2
NC
B2
A2
Y2
14
13
12
11
10
9
8
1
2
3
4
5
6
7
A1
B1
NC
C1
D1
Y1
VSS

— TC74HC221AF —

Dual Monostable Multivibrtor


VDD
R/ C EXT1
C EXT1
Q1
Q2
RESET 2
B2
A2
16
15
14
13
12
11
10
9
Q
Q
Q
Q
1
2
3
4
5
6
7
8
A1
B1
RESET 1
Q1
Q2
C EXT2
R/ C EXT2
VSS

(TOP VIEW)

TRUTH TABLE

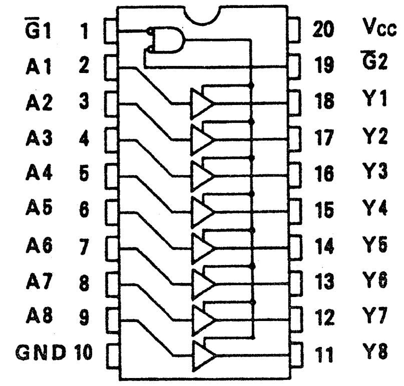
INPUTS			OUTPUTS	
CLEAR	A	B	Q	$\bar{Q}$
L	×	×	L	H
×	H	×	L	H
×	×	L	L	H
H	L	↑	⊓	⊔
H	↓	H	⊓	⊔
↑	L	H	⊓	⊔

— TC74HC4053AF —

Reference
TC4053BP/BF

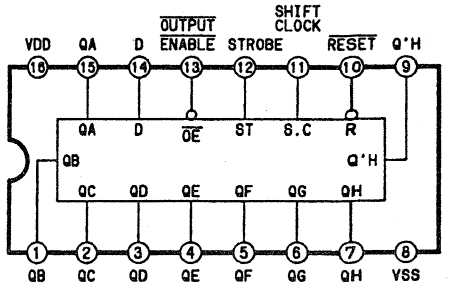
— TC74HC541AF —

Non-Inverted, 3 State Outputs


G1 1
A1 2
A2 3
A3 4
A4 5
A5 6
A6 7
A7 8
A8 9
GND 10
20 Vcc
19 G2
18 Y1
17 Y2
16 Y3
15 Y4
14 Y5
13 Y6
12 Y7
11 Y8

— TC74HC595AF —

8-Bit Shift Register With Output Latch


VDD
QA
D
OUTPUT ENABLE
STROBE
SHIFT CLOCK
RESET
Q'H
16
15
14
13
12
11
10
9
QA
D
OE
ST
S.C
R
QB
Q'H
QC
QD
QE
QF
QG
QH
1
2
3
4
5
6
7
8
QB
QC
QD
QE
QF
QG
QH
VSS

QA~QH:PARALLEL OUTPUTS
Q'H :SERIAL OUTPUT

TRUTH TABLE

RCK	SCK	SCLR	G	FUNCTION
×	×	×	1	QA THRU QH-TRI-STATE
×	×	L	×	SHIFT REGISTER CLEARED QH'-O
×	↑	H	×	SHIFT REGISTER CLOCKED QN-Qn-1.QO-SER
↑	×	H	×	CONTENTS OF SHIFT REGISTER TRANSFERRED TO OUTPUT LATCHES

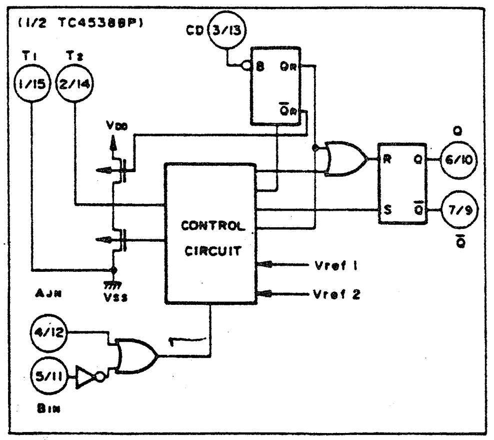
— TC74HC4538AF —

Dual Precision Retriggerable/Resettable
Monostable Multivibrator

TRUTH TABLE

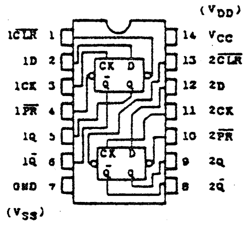
INPUT			OUTPUT		NOTE
AIN	BIN	CD	Q	$\bar{Q}$	
↑	H	H	⊓	⊔	OUTPUT ENABLE
↑	L	H	L	H	INHIBIT
H	↓	H	L	H	INHIBIT
L	↓	H	⊓	⊔	OUTPUT ENABLE
*	*	L	L	H	INHIBIT

* Don't Care


(1/2 TC4538BP)
CD 3/13
T1
T2
1/15
2/14
B
QR
QR
VDD
CONTROL CIRCUIT
R
S
Q
Q
6/10
7/9
Vref 1
Vref 2
AJN
VSS
4/12
5/11
BIN

— TC74HC74AF —

Dual D Flip-Flop with Preset and Clear


(VDD)
1CLR 1
1D 2
1CK 3
1PR 4
1Q 5
1Q 6
GND 7
(VSS)
14 Vcc
13 2CLR
12 2D
11 2CK
10 2PR
9 2Q
8 2Q
CK D
Q Q

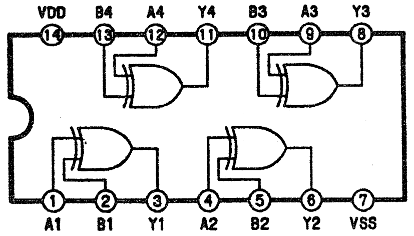
TRUTH TABLE

INPUTS				OUTPUTS		FUNCTION
CLR	PR	D	CK	Q	$\bar{Q}$	
L	H	*	*	L	H	CLEAR
H	L	*	*	H	L	PRESET
L	L	*	*	H	H	—
H	H	L	↑	L	H	—
H	H	H	↑	H	L	—
H	H	*	↓	Qn	$\bar{Q}n$	NO CHANGE

* Don't care

— TC74HC86AF —

Quad Exclusive OR Gate


VDD
B4
A4
Y4
B3
A3
Y3
14
13
12
11
10
9
8
1
2
3
4
5
6
7
A1
B1
Y1
A2
B2
Y2
VSS

$Y = A \oplus B = \bar{A}B + A\bar{B}$

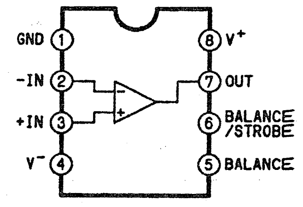
TRUTH TABLE

INPUTS		OUTPUTS
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	L

— µPC311G2 —

Voltage Comparator

(TOP VIEW)


GND 1
-IN 2
+IN 3
V⁻ 4
8 V⁺
7 OUT
6 BALANCE /STROBE
5 BALANCE
-
+

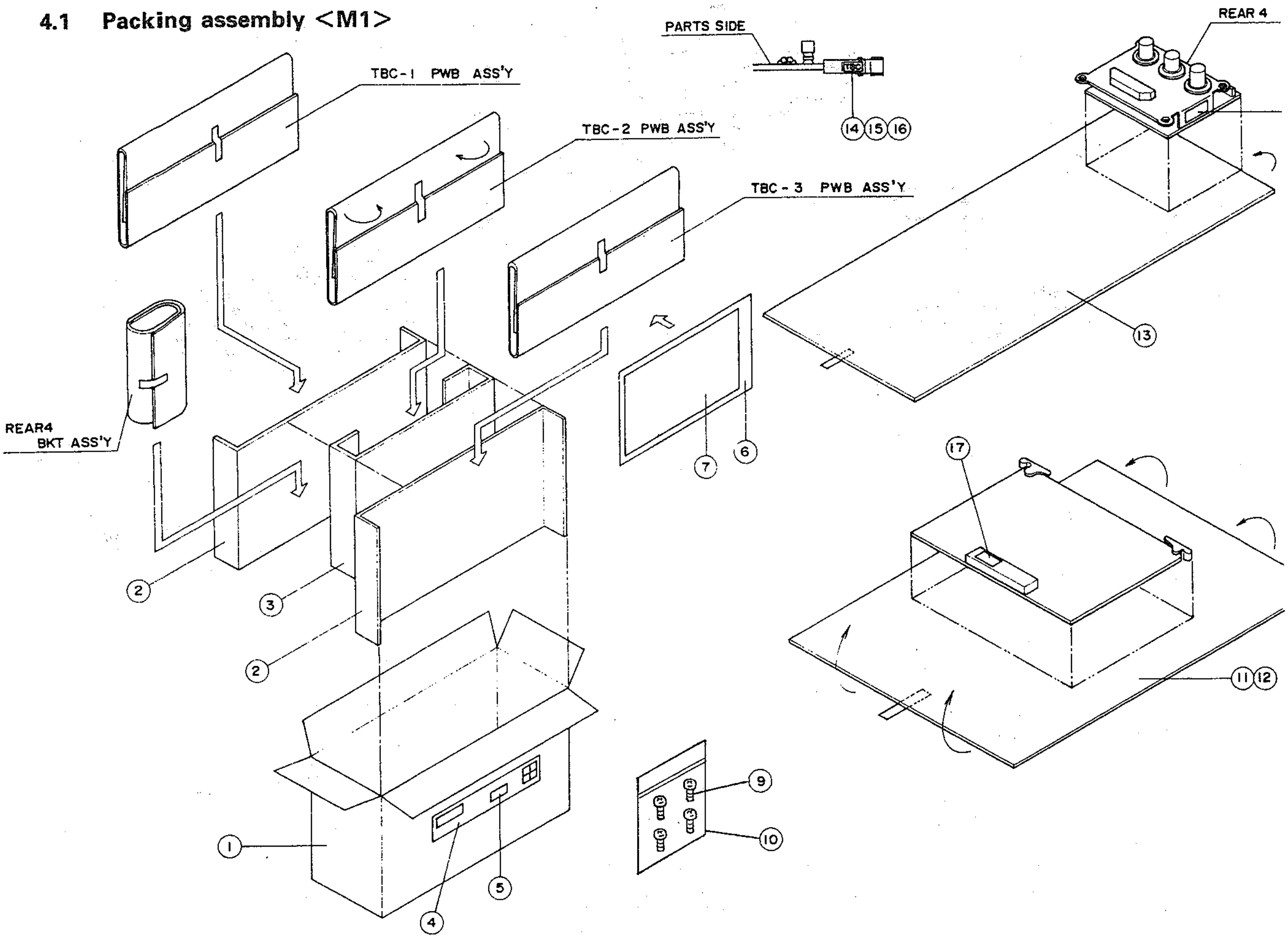
SECTION 4
EXPLODED VIEWS AND PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers

NOTE: <M > indicates mechanical symbol number.

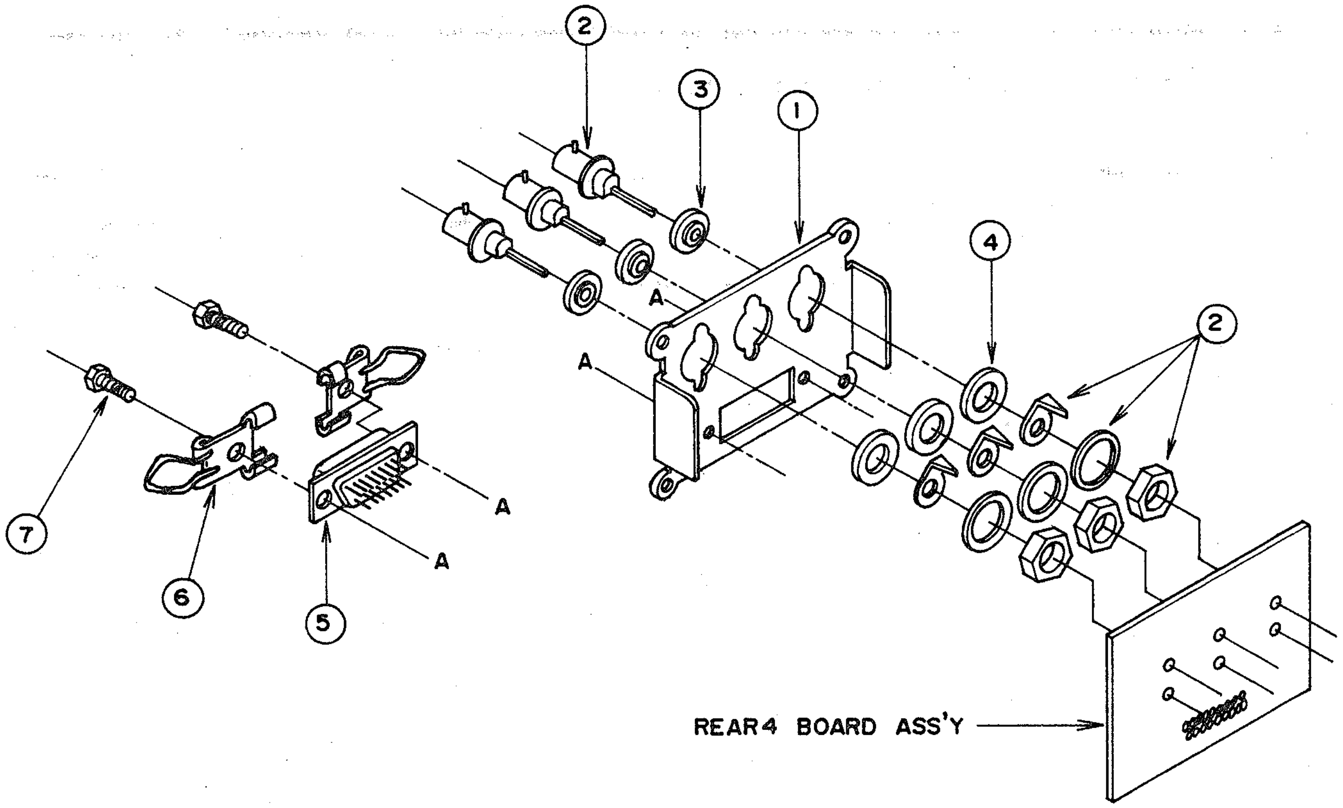
4.1 Packing assembly <M1>


PARTS SIDE
REAR 4
TBC-1 PWB ASS'Y
TBC-2 PWB ASS'Y
TBC-3 PWB ASS'Y
⑭⑮⑯
⑬
REAR4 BKT ASS'Y
⑦
⑥
⑰
②
③
②
⑪⑫
⑨
⑩
①
⑤
④

PACKING ASSEMBLY M1

⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PRD43482	PACKING CASE
2	PRD43594	SPACER,X2
3	PRD43595	SPACER
4	PRD30386-20	PACKING LABEL,X2
5	PU42091	NO.PLATE,X2
6	QPGA017-02505	POLY BAG
⚠ 7	PGD30002-288	INSTRUCTIONS
9	SDSP3006M	SCREW,X4
10	QPGB005-00704	POLY BAG
11	PRD30070-11	AIR CAP,X2
12	PRD30070-12	AIR CAP
13	PRD30070-13	AIR CAP
17	PRD30072-64-04	STICKER,X4

4.2 Rear 4 bracket assembly <M2>



2
3
1
4
2
A
A
A
A
7
6
5
REAR4 BOARD ASS'Y

REAR 4 BRACKET ASSEMBLY M2

M 2 M M ☐ ☐ ☐ ☐

⚠ REF No.	PART No.	PART NAME, DESCRIPTION
1	PGZ01698	REAR PANEL(D) ASSY
1A	PRD30870	REAR PANEL D
2	PGZ00440	BNC CONNECTOR
3	PU48611	RING
4	Q03093-439	WASHER
5	PGZ00755	15P CONNECTOR
6	PGZ00924	SPRING LOCK
7	PGZ00925	SCREW

SECTION 5
ELECTRICAL PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

TBC-1 BOARD ASSEMBLY<60>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA	PRK10055B-01	TBC-1 BOARD ASSY
	IC1	UPC78L12T	IC
	IC2	UPC79N12H	IC
	IC3	UPC78L05T	IC
	IC4	UPC78L12T	IC
	IC5	UPC78L05T	IC
	IC6	UPC78L12T	IC
	IC7	UPC78L05T	IC
	IC8	UPC78L12T	IC
	IC9	UPC2405HF	IC
	IC10	UPC78L12T	IC
	IC11	UPC78L05T	IC
	IC12	UPC78L05T	IC
	IC13	UPC78L05T	IC
	IC14	UPC78L05T	IC
	IC15	UPC78L12T	IC
	IC16	UPC78L05T	IC
	IC17	UPC78L12T	IC
	IC101	TC4W53F	IC
	IC102	UPC4074G2	IC
	IC103	LM6361M	IC
	IC104	TC4W53F	IC
⚠	IC105	CXD1175AM-XE	IC
⚠	IC106	TC74HC74AF	IC
	IC107	NJM5532M-D-X	IC
⚠	IC108	CXD1176Q	IC
⚠	IC109	CXD1176Q	IC
⚠	IC110	CXD1171M	IC
	IC111	LM6361M	IC
	IC112	TC4W53F	IC
	IC113	UPC4074G2	IC
⚠	IC301	JCL0004A	IC
⚠	IC302	CXK1206AM	IC
⚠	IC303	CXK1206AM	IC
⚠	IC304	CXK1206AM	IC
⚠	IC305	CXK1206AM	IC
	IC307	TC74HC595AF	IC
⚠	IC308	SN74LS541NS	IC
⚠	IC309	SN75157PS	IC
	IC310	M51957BL	IC
⚠	IC311	TC74HC541AF	IC
	IC312	TC7W04F	IC
	IC313	TC7S08F	IC
	IC314	TC4W53F	IC
	IC315	TC74HC4538AF	IC
	IC316	TC4W53F	IC
	IC501	UPC4082G2	IC
	IC502	UPC311G2	IC
	IC503	TC74HC221AF	IC
	IC504	CX23065A	IC
	IC505	TC4053BF	IC
⚠	IC506	TC74HC541AF	IC
	IC507	TC74HC157AF	IC
	IC508	TC7W08F	IC
	IC509	TC7S32F	IC
⚠	IC510	TC74HC163AF	IC
	IC511	TC74HC86AF	IC
	IC512	UPC358G2	IC
	IC513	TC4W53F	IC
⚠	IC514	SN75157PS	IC
	IC515	TC7W04F	IC
⚠	IC516	CXD1217M	IC
	IC517	TC74HC21AF	IC
	IC518	TC74HC541AF	IC
⚠	IC519	CXD1217M	IC
⚠	IC701	CXD1171M	IC
⚠	IC702	TC7S04F	IC
	IC703	TC4W53F	IC
	IC704	UPC4082G2	IC
	IC705	NJM5532M-D-X	IC
⚠	IC706	CXD1171M	IC
	IC707	TC7W08F	IC
	IC708	TC7S04F	IC
⚠	IC709	M51272FP	IC
	Q101	2SC2412K(QR)	TRANSISTOR
	Q102	2SC2412K(QR)	TRANSISTOR
	Q103	2SC2412K(QR)	TRANSISTOR
	Q104	2SA1037K(QR)	TRANSISTOR
	Q105	2SC2412K(QR)	TRANSISTOR
	Q106	2SA1037K(QR)	TRANSISTOR
	Q107	2SC2412K(QR)	TRANSISTOR
	Q108	2SC2412K(QR)	TRANSISTOR
	Q109	2SC2412K(QR)	TRANSISTOR
	Q110	2SA1037K(QR)	TRANSISTOR
	Q111	2SA1037K(QR)	TRANSISTOR
	Q112	2SC2412K(QR)	TRANSISTOR
	Q113	2SC2412K(QR)	TRANSISTOR
	Q114	2SC2412K(QR)	TRANSISTOR
	Q115	2SC2412K(QR)	TRANSISTOR
	Q116	2SC2412K(QR)	TRANSISTOR
	Q117	2SC2412K(QR)	TRANSISTOR
	Q118	2SC2412K(QR)	TRANSISTOR
	Q119	2SC2412K(QR)	TRANSISTOR
	Q120	2SC2412K(QR)	TRANSISTOR
	Q121	2SC2412K(QR)	TRANSISTOR
	Q123	2SC2412K(QR)	TRANSISTOR
	Q124	2SA1037K(QR)	TRANSISTOR
	Q125	2SC2412K(QR)	TRANSISTOR
	Q301	DTC124EK	TRANSISTOR
	Q501	2SA1037K(QR)	TRANSISTOR
	Q502	DTC124EK	TRANSISTOR
	Q701	2SC2412K(QR)	TRANSISTOR
	Q703	2SC2412K(QR)	TRANSISTOR
	Q704	2SA1037K(QR)	TRANSISTOR
	Q705	2SC2412K(QR)	TRANSISTOR

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
Q706	2SA1037K(QR)	TRANSISTOR	
Q707	2SC2412K(QR)	TRANSISTOR	
Q709	2SC2412K(QR)	TRANSISTOR	
Q710	2SA1037K(QR)	TRANSISTOR	
Q711	2SC2412K(QR)	TRANSISTOR	
Q712	2SA1037K(QR)	TRANSISTOR	
Q713	2SC2412K(QR)	TRANSISTOR	
Q714	2SA1037K(QR)	TRANSISTOR	
Q715	2SC2412K(QR)	TRANSISTOR	
Q716	2SC2412K(QR)	TRANSISTOR	
D101	MA3062(M)	DIODE	
D102	MA3062(M)	DIODE	
D105	1SS133	DIODE	
D106	1SS133	DIODE	
D301	DAN202K	DIODE	
D302	DAN202K	DIODE	
D303	1SS133	DIODE	
D304	1SS133	DIODE	
D701	DAN202K	DIODE	
D702	DAN202K	DIODE	
D703	MA3039	DIODE	
D704	1SS133	DIODE	
D705	1SS133	DIODE	
R1	NVP1415-102N	V RESISTOR	1kΩ ,1／4W
R2	NVP1415-502N	V RESISTOR	5kΩ ,1／4W
R3	NVP1415-102N	V RESISTOR	1kΩ ,1／4W
R4	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R5	NVP1415-102N	V RESISTOR	1kΩ ,1／4W
R6	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R7	QVPB610-502	V RESISTOR	5kΩ
R8	NVP1415-502N	V RESISTOR	5kΩ ,1／4W
R9	QVPB610-202	V RESISTOR	2kΩ
R10	NVP1415-103N	V RESISTOR	10kΩ ,1／4W
R12	QVPB610-103	V RESISTOR	10kΩ
R14	QVPB610-102	V RESISTOR	1kΩ
R17	QVPB610-102	V RESISTOR	1kΩ
R18	NVP1415-102N	V RESISTOR	1kΩ ,1／4W
R19	QVPB610-102	V RESISTOR	1kΩ
R20	QVPB610-103	V RESISTOR	10kΩ
R21	QVPB610-103	V RESISTOR	10kΩ
R101	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R102	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R103	QRSA08J-393YN	RESISTOR	39kΩ ,1／10W
R104	QRSA08J-182YN	RESISTOR	1.8kΩ ,1／10W
R105	QRSA08J-563YN	RESISTOR	56kΩ ,1／10W
R106	QRSA08J-123YN	RESISTOR	12kΩ ,1／10W
R107	QRSA08J-331YN	RESISTOR	330Ω ,1／10W
R108	QRSA08J-682YN	RESISTOR	6.8kΩ ,1／10W
R109	QRSA08J-473YN	RESISTOR	47kΩ ,1／10W
R110	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R111	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R112	QRSA08J-181YN	RESISTOR	180Ω ,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R113	QRSA08J-682YN	RESISTOR	6.8kΩ ,1／10W
R114	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R115	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R116	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R117	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R118	QRD161J-223	RESISTOR	22kΩ ,1／6W
R119	QRSA08J-392YN	RESISTOR	3.9kΩ ,1／10W
R120	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R121	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R122	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R123	QRSA08J-152YN	RESISTOR	1.5kΩ ,1／10W
R124	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R125	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R126	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R127	QRSA08J-392YN	RESISTOR	3.9kΩ ,1／10W
R128	QRSA08J-222YN	RESISTOR	2.2kΩ ,1／10W
R129	QRSA08J-392YN	RESISTOR	3.9kΩ ,1／10W
R130	QRSA08J-682YN	RESISTOR	6.8kΩ ,1／10W
R131	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R132	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R133	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R134	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R135	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R136	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R137	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R138	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R139	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R140	QRSA08J-0R0Y	RESISTOR	0Ω ,1／10W
R141	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R142	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R143	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R144	QRSA08J-393YN	RESISTOR	39kΩ ,1／10W
R145	QRSA08J-182YN	RESISTOR	1.8kΩ ,1／10W
R146	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R147	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R148	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R149	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R150	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R151	QRSA08J-152YN	RESISTOR	1.5kΩ ,1／10W
R152	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R153	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R154	QRSA08J-0R0Y	RESISTOR	0Ω ,1／10W
R162	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R163	QRSA08J-393YN	RESISTOR	39kΩ ,1／10W
R164	QRSA08J-182YN	RESISTOR	1.8kΩ ,1／10W
R165	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R166	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R167	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R168	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R169	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R170	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R171	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R190	QRSA08J-332YN	RESISTOR	3.3kΩ ,1／10W
R191	QRSA08J-472YN	RESISTOR	4.7kΩ ,1／10W
R192	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R193	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R194	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R195	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R196	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R197	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R198	NRVA62D-201N	RESISTOR	200Ω,1／16W
R199	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R200	QRSA08J-562YN	RESISTOR	5.6kΩ,1／10W
R201	QRSA08J-561YN	RESISTOR	560Ω,1／10W
R202	QRSA08J-562YN	RESISTOR	5.6kΩ,1／10W
R203	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R204	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R205	QRSA08J-563YN	RESISTOR	56kΩ,1／10W
R206	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R207	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R208	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R209	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R210	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R211	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R212	QRSA08J-563YN	RESISTOR	56kΩ,1／10W
R213	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R214	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R215	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R216	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R217	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R218	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R219	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R220	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R221	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R222	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R223	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R224	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R225	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R226	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R227	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R228	QRSA08J-331YN	RESISTOR	330Ω,1／10W
R229	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R230	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R231	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R232	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R234	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R235	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R236	QRSA08J-182YN	RESISTOR	1.8kΩ,1／10W
R238	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R239	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R240	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R241	QRSA08J-123YN	RESISTOR	12kΩ,1／10W
R242	QRSA08J-392YN	RESISTOR	3.9kΩ,1／10W
R243	QRSA08J-123YN	RESISTOR	12kΩ,1／10W
R244	QRSA08J-562YN	RESISTOR	5.6kΩ,1／10W
R245	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R246	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R247	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R248	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R249	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R250	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R251	QRSA08J-103YN	RESISTOR	10kΩ,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R252	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R301	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R302	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R303	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R304	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R305	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R306	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R307	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R308	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R309	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R310	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R311	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R312	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R313	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R314	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R315	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R316	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R317	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R318	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R319	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R320	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R321	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R326	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R327	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R328	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R329	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R334	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R336	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R337	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R339	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R340	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R341	QRSA08J-562YN	RESISTOR	5.6kΩ,1／10W
R342	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R345	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R346	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R347	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R348	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R349	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R350	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R351	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R352	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R353	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R354	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R355	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R356	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R357	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R358	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R359	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R360	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R361	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R362	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R363	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R364	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R365	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R366	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R367	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R368	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R369	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R370	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R371	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R374	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R391	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R409	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R410	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R411	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R412	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R413	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R414	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R415	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R419	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R420	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R421	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R422	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R423	QRSA08J-224YN	RESISTOR	220kΩ,1／10W
R424	QRSA08J-224YN	RESISTOR	220kΩ,1／10W
R425	NRVA62D-303N	RESISTOR	30kΩ,1／16W
R426	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R501	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R502	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R503	QRSA08J-680YN	RESISTOR	68Ω,1／10W
R504	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R505	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R506	QRSA08J-560YN	RESISTOR	56Ω,1／10W
R507	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R508	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R509	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R510	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R511	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R512	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R513	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R514	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R515	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R516	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R517	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R518	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R519	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R520	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R521	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R522	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R523	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R524	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R525	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R526	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R527	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R528	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R529	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R530	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R531	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R532	QRSA08J-822YN	RESISTOR	8.2kΩ,1／10W
R533	QRSA08J-392YN	RESISTOR	3.9kΩ,1／10W
R534	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R535	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R536	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R537	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R538	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R539	QRSA08J-105YN	RESISTOR	1MΩ,1／10W
R540	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R541	QRSA08J-105YN	RESISTOR	1MΩ,1／10W
R542	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R543	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R544	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R545	QRSA08J-105YN	RESISTOR	1MΩ,1／10W
R546	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R547	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R548	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R549	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R550	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R551	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R552	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R553	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R555	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R556	QRD161J-101	RESISTOR	100Ω,1／6W
R709	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R710	NRVA62D-201N	RESISTOR	200Ω,1／16W
R711	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R712	QRSA08J-683YN	RESISTOR	68kΩ,1／10W
R713	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R714	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R715	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R716	QRSA08J-101YN	RESISTOR	100Ω,1／10W
R717	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R720	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R721	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R722	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R723	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R724	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R725	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R726	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R727	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R728	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R730	NRVA62D-331N	RESISTOR	330Ω,1／16W
R733	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R734	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R735	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R736	QRSA08J-123YN	RESISTOR	12kΩ,1／10W
R737	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R738	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R739	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R740	QRSA08J-562YN	RESISTOR	5.6kΩ,1／10W
R741	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R742	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R743	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R744	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R745	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R746	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R747	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R748	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION
	R749	QRSA08J-332YN	RESISTOR	3.3kΩ ,1／10W
	R750	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R759	QRSA08J-332YN	RESISTOR	3.3kΩ ,1／10W
	R760	NRVA62D-201N	RESISTOR	200Ω ,1／16W
	R761	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
	R762	QRSA08J-563YN	RESISTOR	56kΩ ,1／10W
	R763	QRSA08J-222YN	RESISTOR	2.2kΩ ,1／10W
	R764	QRSA08J-391YN	RESISTOR	390Ω ,1／10W
	R767	QRSA08J-391YN	RESISTOR	390Ω ,1／10W
	R770	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
	R771	QRSA08J-222YN	RESISTOR	2.2kΩ ,1／10W
	R774	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
	R775	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
	R776	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
	R777	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
	R778	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R780	NRVA62D-331N	RESISTOR	330Ω ,1／16W
	R781	QRSA08J-331YN	RESISTOR	330Ω ,1／10W
	R782	QRSA08J-331YN	RESISTOR	330Ω ,1／10W
	R783	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R784	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R785	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
	R786	QRSA08J-153YN	RESISTOR	15kΩ ,1／10W
	R787	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
	R788	NRVA62D-222N	RESISTOR	2.2kΩ ,1／16W
	R789	NRVA62D-471N	RESISTOR	470Ω ,1／16W
	R790	QRSA08J-153YN	RESISTOR	15kΩ ,1／10W
	R791	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
	R792	NRVA62D-471N	RESISTOR	470Ω ,1／16W
	R793	NRVA62D-222N	RESISTOR	2.2kΩ ,1／16W
	R794	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R795	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
	R796	QRSA08J-473YN	RESISTOR	47kΩ ,1／10W
	R797	QRSA08J-153YN	RESISTOR	15kΩ ,1／10W
	R798	QRSA08J-222YN	RESISTOR	2.2kΩ ,1／10W
	R799	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
	R800	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
	R801	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
	R802	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
	R803	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
	R804	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
	R807	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
	R808	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
	R809	NRVA62D-472N	RESISTOR	4.7kΩ ,1／16W
	R810	NRVA62D-432N	RESISTOR	4.3kΩ ,1／16W
	R811	QRD161J-105	RESISTOR	1MΩ ,1／6W
	R812	QRD161J-105	RESISTOR	1MΩ ,1／6W
	RA101	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA102	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA103	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA104	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA301	EXB-P88103M	NETWORK RESISTOR	
	RA302	EXB-P88103M	NETWORK RESISTOR	

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION
⚠	RA501	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA701	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	RA702	NRB082J-101NV	NETWORK RESISTOR	100Ω ,8W
	C101	QETC1EM-107	E CAPACITOR	100μF,25V
	C102	QETC1CM-107	E CAPACITOR	100μF,16V
	C103	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C104	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C105	QETC1CM-107	E CAPACITOR	100μF,16V
	C106	QETC1AM-107	E CAPACITOR	100μF,10V
	C107	QETC1AM-107	E CAPACITOR	100μF,10V
	C108	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C109	NEH11CM-106N	E CAPACITOR	10μF,16V
	C110	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C111	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C112	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C113	NFV21CJ-102AY	TF CAPACITOR	0.001μF,16V
	C114	NFV31CJ-473AY	TF CAPACITOR	0.047μF,16V
	C115	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C116	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C117	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C118	QCTA1CH-180	CAPACITOR	18pF,16V
	C119	QCTA1CH-2R0	CAPACITOR	2pF,16V
	C120	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C121	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C122	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C123	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C124	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C125	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C126	QEK61CM-106	E CAPACITOR	10μF,16V
	C127	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C128	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C129	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C130	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C131	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C132	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C133	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C134	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C135	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C136	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C137	QETC1CM-107	E CAPACITOR	100μF,16V
	C138	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C139	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C140	QETC1CM-107	E CAPACITOR	100μF,16V
	C141	QETC1AM-107	E CAPACITOR	100μF,10V
	C142	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C143	QETC1CM-476	E CAPACITOR	47μF,16V
	C144	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C145	QCTA1CH-330	CAPACITOR	33pF,16V
	C146	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C147	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C148	QETC1AM-107	E CAPACITOR	100μF,10V
	C149	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C150	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C151	NEH11CM-106N	E CAPACITOR	10μF,16V

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION
	C152	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C153	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C154	NFV21CJ-103AY	TF CAPACITOR	0.01μF,16V
	C155	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C156	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C157	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C158	QETC1AM-107	E CAPACITOR	100μF,10V
	C159	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C160	QETC1CM-476	E CAPACITOR	47μF,16V
	C161	QCTA1CH-330	CAPACITOR	33pF,16V
	C162	NEH11CM-106N	E CAPACITOR	10μF,16V
	C163	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C164	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C165	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C166	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C167	NFV21CJ-103AY	TF CAPACITOR	0.01μF,16V
	C168	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C169	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C170	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C171	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C172	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C173	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C174	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C175	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C176	QETC1AM-107	E CAPACITOR	100μF,10V
	C177	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C178	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C179	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C180	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C181	QCTA1CH-101	CAPACITOR	100pF,16V
	C182	QEF81CM-475	TANTAL CAPACITOR	4.7μF,16V
	C183	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C184	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C185	QETC1CM-107	E CAPACITOR	100μF,16V
	C186	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C187	QETC1AM-107	E CAPACITOR	100μF,10V
	C188	QETC1AM-476	E CAPACITOR	47μF,10V
	C189	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C190	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C191	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C192	QETC1AM-107	E CAPACITOR	100μF,10V
	C193	QCSA1HJ-681	CAPACITOR	680pF,50V
	C194	QETC1AM-107	E CAPACITOR	100μF,10V
	C195	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C196	QETC0JM-107	E CAPACITOR	100μF,6.3V
	C197	NEH11CM-106N	E CAPACITOR	10μF,16V
	C198	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C199	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C200	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C201	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C202	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C203	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C204	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C205	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C206	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C207	NEH11CM-106N	E CAPACITOR	10μF,16V
	C208	QCSA1HJ-221	CAPACITOR	220pF,50V
	C209	QCSA1HJ-221	CAPACITOR	220pF,50V
	C211	QCSA1HJ-471	CAPACITOR	470pF,50V
⚠	C213	QCF11HP-222	CAPACITOR	0.0022μF,50V
⚠	C214	QCF11HP-222	CAPACITOR	0.0022μF,50V
⚠	C215	QCF11HP-222	CAPACITOR	0.0022μF,50V
⚠	C216	QCF11HP-222	CAPACITOR	0.0022μF,50V
⚠	C217	QCF11HP-222	CAPACITOR	0.0022μF,50V
	C301	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C302	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C303	QETC1AM-107	E CAPACITOR	100μF,10V
	C304	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C305	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C306	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C307	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C308	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C309	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C310	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C311	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C312	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C313	QCSA1HJ-100	CAPACITOR	10pF,50V
	C314	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C315	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C316	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C317	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C318	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C319	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C320	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C321	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C322	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C323	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C324	QCTA1CH-221	CAPACITOR	220pF,16V
⚠	C326	QCSA1HJ-560	CAPACITOR	56pF,50V
	C327	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C328	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C329	NFV31CJ-103AY	TF CAPACITOR	0.01μF,16V
	C330	NFV31CJ-103AY	TF CAPACITOR	0.01μF,16V
	C331	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C332	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C501	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C502	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C503	QEK61CM-107	E CAPACITOR	100μF,16V
	C504	QCSA1HJ-3R0	CAPACITOR	3pF,50V
	C505	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C506	NFV31CJ-102AY	TF CAPACITOR	0.001μF,16V
	C507	NEH11CM-106N	E CAPACITOR	10μF,16V
	C508	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C509	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C510	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C511	QETC1AM-107	E CAPACITOR	100μF,10V
	C512	NFV31CJ-102AY	TF CAPACITOR	0.001μF,16V
	C513	NFV31CJ-102AY	TF CAPACITOR	0.001μF,16V
	C514	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C515	NFV31CJ-104AY	TF CAPACITOR	0.1μF,16V
	C516	QEPC0JM-476	NP E CAPACITOR	47μF,6.3V
	C517	QCTA1CH-391	CAPACITOR	390pF,16V
	C518	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C519	QCFA1HZ-103	CAPACITOR	0.01μF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C520	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C521	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C522	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C523	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C524	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C525	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C526	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C527	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C528	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C529	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C530	QEF81AM-105	TANTAL CAPACITOR	1 μ F,10V
	C531	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C532	NFV31CJ-104AY	TF CAPACITOR	0.1 μ F,16V
	C533	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C534	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C535	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C536	QEF81AM-475	TANTAL CAPACITOR	4.7 μ F,10V
	C537	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C538	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C539	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C540	QETA1AM-107	E CAPACITOR	100 μ F,10V
	C541	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C542	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C543	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C544	QEF81AM-105	TANTAL CAPACITOR	1 μ F,10V
	C545	NEH11CM-106N	E CAPACITOR	10 μ F,16V
	C546	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C547	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C548	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C549	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C550	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C551	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
⚠	C553	QCSA1HJ-101	CAPACITOR	100pF,50V
⚠	C554	QCSA1HJ-101	CAPACITOR	100pF,50V
	C555	QCFA1HZ-104	CAPACITOR	0.1 μ F,50V
	C556	QFN41HJ-102	M CAPACITOR	0.001 μ F,50V
	C557	QCC11CK-104	CAPACITOR	0.1 μ F,16V
⚠	C558	QCS11HJ-101	CAPACITOR	100pF,50V
⚠	C559	QCS11HJ-101	CAPACITOR	100pF,50V
⚠	C560	QCS11HJ-101	CAPACITOR	100pF,50V
⚠	C561	QCS11HJ-101	CAPACITOR	100pF,50V
	C701	QCYA1EK-104	CAPACITOR	0.1 μ F,25V
	C702	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C703	QCYA1EK-104	CAPACITOR	0.1 μ F,25V
	C704	QETC1AM-476	E CAPACITOR	47 μ F,10V
	C705	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C706	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C707	QETC1AM-476	E CAPACITOR	47 μ F,10V
	C708	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C709	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C710	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C712	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
	C713	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
	C714	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C715	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C716	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C717	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C718	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C719	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C720	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C721	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C722	QEF81AM-475	TANTAL CAPACITOR	4.7 μ F,10V
	C723	QEF81AM-475	TANTAL CAPACITOR	4.7 μ F,10V
	C724	QCTA1CH-120	CAPACITOR	12pF,16V
	C725	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C726	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C727	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C728	QCTA1CH-330	CAPACITOR	33pF,16V
	C729	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C730	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C731	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C732	QCYA1EK-104	CAPACITOR	0.1 μ F,25V
	C733	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C734	QCYA1EK-104	CAPACITOR	0.1 μ F,25V
	C735	QETC1AM-476	E CAPACITOR	47 μ F,10V
	C736	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C737	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C738	QETC1AM-476	E CAPACITOR	47 μ F,10V
	C739	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C740	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C741	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C744	QETC0JM-107	E CAPACITOR	100 μ F,6.3V
	C745	QETC1CM-107	E CAPACITOR	100 μ F,16V
	C746	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C747	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C748	QCSA1HJ-271	CAPACITOR	270pF,50V
	C749	QCSA1HJ-820	CAPACITOR	82pF,50V
	C750	QCSA1HJ-180	CAPACITOR	18pF,50V
	C751	QCSA1HJ-101	CAPACITOR	100pF,50V
	C752	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C753	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C754	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C755	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C756	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C757	QENC1AM-476	NP E CAPACITOR	47 μ F,10V
	C758	QFV71HJ-474	TF CAPACITOR	0.47 μ F,50V
	C759	NEH11CM-106N	E CAPACITOR	10 μ F,16V
	C760	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C761	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C762	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C763	QENC1AM-476	NP E CAPACITOR	47 μ F,10V
	C764	QFV71HJ-474	TF CAPACITOR	0.47 μ F,50V
	C765	NEH11CM-106N	E CAPACITOR	10 μ F,16V
	C766	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C767	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C768	QETC1AM-476	E CAPACITOR	47 μ F,10V
	C769	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C770	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C771	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C772	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C773	QETC1CM-107	E CAPACITOR	100 μ F,16V
	C774	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C775	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V

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#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C776	QCFA1EZ-104	CAPACITOR	0.1 μF,25V
	C777	QCSA1HJ-101	CAPACITOR	100pF,50V
	C778	QCSA1HJ-390	CAPACITOR	39pF,50V
	C779	QCFA1HZ-103	CAPACITOR	0.01 μF,50V
	C780	QCT05CH-4R0	CAPACITOR	4pF
⚠	C782	QCF11HP-222	CAPACITOR	0.0022 μF,50V
	L701	YU41134-121J	COIL	120 μH
	L702	YU41134-560JY	COIL	56 μH
	L703	YU41134-3R9MY	COIL	3.9 μH
	LPF1	PGZ01432	LOW PASS FILTER	
	LPF701	PGZ01433	LOW PASS FILTER	
	LPF702	PGZ01433	LOW PASS FILTER	
	BPF701	PGZ01528	BAND PASS FILTER	
	DL1	PGZ00545	DELAY LINE	
⚠	X1	PGZ01522	CRYSTAL RESONATOR	
⚠	X2	PGZ01523	CRYSTAL RESONATOR	
	SW1	QSRA002-L02	DIP SW	
	SW2	QSS1K41-L01	DIP SW	
	SW3	PU54440	SWITCH	
⚠	K101	PGZ01693-009Z	FERRATE BEADS	
⚠	K108	PGZ01693-009Z	FERRATE BEADS	
⚠	K110	PGZ01693-009Z	FERRATE BEADS	
⚠	K112	PGZ01693-009Z	FERRATE BEADS	
⚠	K114	PGZ01693-009Z	FERRATE BEADS	
⚠	K116	PGZ01693-009Z	FERRATE BEADS	
⚠	K117	PGZ01693-009Z	FERRATE BEADS	
⚠	K302	PGZ01693-009Z	FERRATE BEADS	
⚠	K303	PGZ01693-009Z	FERRATE BEADS	
⚠	K304	PGZ01693-009Z	FERRATE BEADS	
⚠	K305	PGZ01693-009Z	FERRATE BEADS	
⚠	K306	PGZ01693-009Z	FERRATE BEADS	
⚠	K307	PGZ01693-009Z	FERRATE BEADS	
⚠	K308	PGZ01693-009Z	FERRATE BEADS	
⚠	K309	PGZ01693-009Z	FERRATE BEADS	
⚠	K310	PGZ01693-009Z	FERRATE BEADS	
⚠	K311	PGZ01693-009Z	FERRATE BEADS	
⚠	K312	PGZ01693-009Z	FERRATE BEADS	
⚠	K313	PGZ01693-009Z	FERRATE BEADS	
⚠	K314	PGZ01693-005Z	FERRATE BEADS	
⚠	K315	PGZ01693-005Z	FERRATE BEADS	
⚠	K316	PGZ01693-005Z	FERRATE BEADS	
⚠	K317	PGZ01693-005Z	FERRATE BEADS	
⚠	K323	PGZ01693-009Z	FERRATE BEADS	
⚠	K324	PGZ01693-009Z	FERRATE BEADS	
⚠	K501	PGZ01693-009Z	FERRATE BEADS	
⚠	K502	PGZ01693-009Z	FERRATE BEADS	
⚠	K503	PGZ01693-009Z	FERRATE BEADS	
⚠	K504	PGZ01693-005Z	FERRATE BEADS	
⚠	K505	PGZ01693-005Z	FERRATE BEADS	
⚠	K516	PGZ01693-009Z	FERRATE BEADS	
⚠	K701	PGZ01693-009Z	FERRATE BEADS	
⚠	K702	PGZ01693-009Z	FERRATE BEADS	
⚠	K703	PGZ01693-009Z	FERRATE BEADS	
⚠	K704	PGZ01693-009Z	FERRATE BEADS	
⚠	K705	PGZ01693-009Z	FERRATE BEADS	
⚠	K706	PGZ01693-009Z	FERRATE BEADS	
⚠	K707	PGZ01693-009Z	FERRATE BEADS	
⚠	K708	PGZ01693-009Z	FERRATE BEADS	
⚠	K709	PGZ01693-009Z	FERRATE BEADS	
⚠	K710	PGZ01693-009Z	FERRATE BEADS	
⚠	K712	PGZ01693-009Z	FERRATE BEADS	
⚠	KA301	PGZ01692-001Z	FERRATE ARRAY	
⚠	KA302	PGZ01692-001Z	FERRATE ARRAY	
⚠	KA303	PGZ01692-001Z	FERRATE ARRAY	
⚠	KA304	PGZ01692-001Z	FERRATE ARRAY	
⚠	KA305	PGZ01692-001Z	FERRATE ARRAY	
⚠	KA306	PGZ01692-001Z	FERRATE ARRAY	
	RV1	PU53276	PLASTIC RIVET, × 4	
	SLD1	PRD30781-01-03	SHIELD PLATE	
	GND1	PGZ00587-00	TEST POINT, × 7	
	TP1	PGZ01015	TEST PIN, × 14	
	CN1	PGZ00421-44	MALE CONNECTOR	
	CN2	PGZ00421-44	MALE CONNECTOR	
	CN3	PGZ01518-100	HALF PITCH CONNECTOR	
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR	
⚠	CP2	ICP-F20	CIRCUIT PROTECTOR	

TBC-2 BOARD ASSEMBLY<61>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA	PRK10110B-02	TBC-2 BOARD ASSY
	IC1	UPC78L12T	IC

#⚠REF No.	PART No.	PART NAME, DESCRIPTION	
IC2	UPC78L05T	IC	
IC3	UPC78L05T	IC	
IC4	UPC78L05T	IC	
IC5	UPC78L12T	IC	
IC6	UPC78L05T	IC	
IC7	UPC78L12T	IC	
IC8	UPC78L12T	IC	
IC9	UPC78L05T	IC	
IC10	UPC78L12T	IC	
IC11	UPC78L12T	IC	
IC101	TC74HC4053AF	IC	
IC102	NJM5532M-D-X	IC	
IC103	M51279FP	IC	
IC104	UPC319G2	IC	
IC105	TC74HC4066AF	IC	
IC106	UPC4074G2	IC	
IC107	UPC358G2	IC	
IC108	TC4W66F	IC	
IC109	UPC358G2	IC	
IC110	TC74HC4538AF	IC	
IC111	TC74HC74AF	IC	
IC112	TC74HC4538AF	IC	
IC113	TC74HC4538AF	IC	
IC114	TC74HC4538AF	IC	
IC115	UPC4082G2	IC	
IC116	TC4W53F	IC	
IC117	TC74HC4538AF	IC	
IC118	TC7S04F	IC	
IC119	TC74HC4538AF	IC	
IC120	TC4W53F	IC	
IC301	LM6361M	IC	
IC302	AN6308S	IC	
IC303	AN6308S	IC	
IC304	LM6361M	IC	
IC305	NJM5532M-D-X	IC	
IC306	AN6308S	IC	
IC307	AN6308S	IC	
IC308	NJM5532M-D-X	IC	
IC309	AN6308S	IC	
IC310	AN6308S	IC	
IC311	SN16913P	IC	
IC312	UPC319G2	IC	
Q101	2SC2412K(QR)	TRANSISTOR	
Q102	2SK621	FE TRANSISTOR	
Q103	2SC2412K(QR)	TRANSISTOR	
Q104	2SC2412K(QR)	TRANSISTOR	
Q105	2SA1037K(QR)	TRANSISTOR	
Q106	2SC2412K(QR)	TRANSISTOR	
Q107	2SA1037K(QR)	TRANSISTOR	
Q108	2SC2412K(QR)	TRANSISTOR	
Q109	2SA1037K(QR)	TRANSISTOR	
Q110	2SC2412K(QR)	TRANSISTOR	
Q111	2SA1037K(QR)	TRANSISTOR	
Q112	2SC2412K(QR)	TRANSISTOR	
Q113	2SC2412K(QR)	TRANSISTOR	
Q114	2SA1037K(QR)	TRANSISTOR	
Q115	2SC2412K(QR)	TRANSISTOR	
Q116	2SA1037K(QR)	TRANSISTOR	
Q117	2SC2412K(QR)	TRANSISTOR	
Q118	2SC2412K(QR)	TRANSISTOR	
Q119	2SA1037K(QR)	TRANSISTOR	
Q120	2SC2412K(QR)	TRANSISTOR	
Q121	2SA1037K(QR)	TRANSISTOR	
Q122	2SC2412K(QR)	TRANSISTOR	
Q123	2SC2412K(QR)	TRANSISTOR	
Q124	2SK621	FE TRANSISTOR	
Q301	2SA1037K(QR)	TRANSISTOR	
Q302	2SC2412K(QR)	TRANSISTOR	
Q303	2SC2412K(QR)	TRANSISTOR	
Q304	2SA1037K(QR)	TRANSISTOR	
Q305	2SC2412K(QR)	TRANSISTOR	
Q306	2SA1037K(QR)	TRANSISTOR	
Q307	2SC2412K(QR)	TRANSISTOR	
Q308	2SC2412K(QR)	TRANSISTOR	
Q309	2SC2412K(QR)	TRANSISTOR	
Q310	2SA1037K(QR)	TRANSISTOR	
Q311	2SC2412K(QR)	TRANSISTOR	
Q312	2SC2412K(QR)	TRANSISTOR	
Q313	2SC2412K(QR)	TRANSISTOR	
Q314	2SC2412K(QR)	TRANSISTOR	
Q315	2SC2412K(QR)	TRANSISTOR	
Q316	2SA1037K(QR)	TRANSISTOR	
Q317	2SC2412K(QR)	TRANSISTOR	
Q318	2SC2412K(QR)	TRANSISTOR	
Q319	2SC2412K(QR)	TRANSISTOR	
Q320	2SC2412K(QR)	TRANSISTOR	
Q321	2SC2412K(QR)	TRANSISTOR	
Q322	2SA1037K(QR)	TRANSISTOR	
Q323	2SC2412K(QR)	TRANSISTOR	
Q324	2SC2412K(QR)	TRANSISTOR	
Q325	2SC2412K(QR)	TRANSISTOR	
Q326	2SC2412K(QR)	TRANSISTOR	
Q327	2SK621	FE TRANSISTOR	
Q328	2SC2412K(QR)	TRANSISTOR	
Q329	2SC2412K(QR)	TRANSISTOR	
Q330	2SC2412K(QR)	TRANSISTOR	
Q331	2SC2412K(QR)	TRANSISTOR	
Q332	2SC2412K(QR)	TRANSISTOR	
Q333	2SC2412K(QR)	TRANSISTOR	
D101	DAP202K	DIODE	
D102	DAP202K	DIODE	
D103	DAP202K	DIODE	
R2	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R3	QVPB610-501	V RESISTOR	500Ω
R4	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R5	QVPB610-501	V RESISTOR	500Ω
R6	NVP1415-103N	V RESISTOR	10kΩ ,1／4W
R7	NVP1415-103N	V RESISTOR	10kΩ ,1／4W
R8	QVPB610-103	V RESISTOR	10kΩ

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R9	QVPB610-103	V RESISTOR	10kΩ
R11	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R21	QVPB610-501	V RESISTOR	500Ω
R22	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R23	QVPB610-102	V RESISTOR	1kΩ
R24	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R25	QVPB610-102	V RESISTOR	1kΩ
R26	QVPB610-202	V RESISTOR	2kΩ
R27	NVP1415-202N	V RESISTOR	2kΩ ,1／4W
R28	NVP1415-103N	V RESISTOR	10kΩ ,1／4W
R101	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R102	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R103	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R104	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R105	QRSA08J-471YN	RESISTOR	470Ω ,1／10W
R106	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R107	QRSA08J-152YN	RESISTOR	1.5kΩ ,1／10W
R108	QRSA08J-152YN	RESISTOR	1.5kΩ ,1／10W
R110	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R111	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R112	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R113	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R114	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R115	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R116	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R117	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R118	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R119	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R120	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R121	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R122	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R123	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R124	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R125	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R126	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R127	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
R128	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R129	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R130	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R131	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R132	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R133	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R134	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R135	QRSA08J-471YN	RESISTOR	470Ω ,1／10W
R136	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R137	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R138	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R139	QRSA08J-333YN	RESISTOR	33kΩ ,1／10W
R140	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R141	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R142	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R143	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
R144	NRVA62D-821N	RESISTOR	820Ω ,1／16W
R145	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R146	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R147	QRSA08J-181YN	RESISTOR	180Ω ,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R148	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R149	QRSA08J-821YN	RESISTOR	820Ω ,1／10W
R150	QRSA08J-471YN	RESISTOR	470Ω ,1／10W
R151	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R152	QRSA08J-823YN	RESISTOR	82kΩ ,1／10W
R153	QRSA08J-332YN	RESISTOR	3.3kΩ ,1／10W
R154	QRSA08J-474YN	RESISTOR	470kΩ ,1／10W
R155	QRSA08J-684YN	RESISTOR	680kΩ ,1／10W
R156	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R159	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R160	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
R161	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R163	QRSA08J-393YN	RESISTOR	39kΩ ,1／10W
R164	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R165	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R166	QRSA08J-181YN	RESISTOR	180Ω ,1／10W
R167	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R168	QRSA08J-152YN	RESISTOR	1.5kΩ ,1／10W
R169	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R170	QRSA08J-122YN	RESISTOR	1.2kΩ ,1／10W
R171	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R172	QRSA08J-472YN	RESISTOR	4.7kΩ ,1／10W
R173	QRSA08J-104YN	RESISTOR	100kΩ ,1／10W
R174	QRSA08J-472YN	RESISTOR	4.7kΩ ,1／10W
R175	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R176	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R177	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R178	QRSA08J-221YN	RESISTOR	220Ω ,1／10W
R179	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R180	QRSA08J-331YN	RESISTOR	330Ω ,1／10W
R181	QRSA08J-101YN	RESISTOR	100Ω ,1／10W
R182	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R183	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R184	QRSA08J-562YN	RESISTOR	5.6kΩ ,1／10W
R185	QRSA08J-104YN	RESISTOR	100kΩ ,1／10W
R186	QRSA08J-272YN	RESISTOR	2.7kΩ ,1／10W
R187	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R188	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R189	NRVA62D-682N	RESISTOR	6.8kΩ ,1／16W
R190	NRVA62D-332N	RESISTOR	3.3kΩ ,1／16W
R191	NRVA62D-153N	RESISTOR	15kΩ ,1／16W
R192	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R193	NRVA62D-102N	RESISTOR	1kΩ ,1／16W
R194	NRVA62D-103N	RESISTOR	10kΩ ,1／16W
R195	NRVA62D-103N	RESISTOR	10kΩ ,1／16W
R196	NRVA62D-103N	RESISTOR	10kΩ ,1／16W
R199	QRSA08J-0R0Y	RESISTOR	0Ω ,1／10W
R200	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
R202	QRSA08J-104YN	RESISTOR	100kΩ ,1／10W
R205	QRSA08J-182YN	RESISTOR	1.8kΩ ,1／10W
R206	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R207	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R208	QRSA08J-681YN	RESISTOR	680Ω ,1／10W
R209	QRSA08J-102YN	RESISTOR	1kΩ ,1／10W
R210	QRSA08J-0R0Y	RESISTOR	0Ω ,1／10W
R212	QRSA08J-0R0Y	RESISTOR	0Ω ,1／10W

#⚠REF No.	PART No.	PART NAME, DESCRIPTION	
R213	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R214	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R217	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R218	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R219	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R220	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R223	NRVA62D-102N	RESISTOR	1kΩ,1／16W
R224	NRVA62D-682N	RESISTOR	6.8kΩ,1／16W
R226	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R227	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R228	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R230	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R231	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R232	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R233	QRSA08J-682YN	RESISTOR	6.8kΩ,1／10W
R234	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R235	QRSA08J-471YN	RESISTOR	470Ω,1／10W
R236	QRSA08J-0R0Y	RESISTOR	0Ω,1／10W
R237	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R238	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R239	QRSA08J-471YN	RESISTOR	470Ω,1／10W
R240	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R241	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R242	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R243	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R244	NRVA62D-153N	RESISTOR	15kΩ,1／16W
R245	QRSA08J-563YN	RESISTOR	56kΩ,1／10W
R246	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R247	QRSA08J-104YN	RESISTOR	100kΩ,1／10W
R301	QRSA08J-563YN	RESISTOR	56kΩ,1／10W
R302	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R303	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R304	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R305	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R306	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R307	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R308	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R309	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R310	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R311	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R312	QRSA08J-563YN	RESISTOR	56kΩ,1／10W
R313	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R314	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R315	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R316	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R317	QRSA08J-121YN	RESISTOR	120Ω,1／10W
R318	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R319	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R320	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R321	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R322	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R323	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R324	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R325	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R326	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R327	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R328	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R329	QRSA08J-332YN	RESISTOR	3.3kΩ,1／10W
R330	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R331	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R332	QRD161J-0R0	RESISTOR	0Ω,1／6W
R333	QRD161J-102	RESISTOR	1kΩ,1／6W
R334	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R335	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R336	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R337	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R338	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R339	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R340	QRSA08J-152YN	RESISTOR	1.5kΩ,1／10W
R341	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R342	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R343	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R344	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R345	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R346	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R347	QRD161J-750	RESISTOR	75Ω,1／6W
R348	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R349	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R350	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R351	NRVA62D-821N	RESISTOR	820Ω,1／16W
R352	NRVA62D-821N	RESISTOR	820Ω,1／16W
R353	NRVA62D-821N	RESISTOR	820Ω,1／16W
R354	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R355	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R356	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R357	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R358	NRVA62D-102N	RESISTOR	1kΩ,1／16W
R359	NRVA62D-561N	RESISTOR	560Ω,1／16W
R360	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R361	QRV141F-2740AY	CMF RESISTOR	274Ω,1／4W
R362	QRV141F-8200AY	CMF RESISTOR	820Ω,1／4W
R363	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R364	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R365	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R366	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R367	NRVA62D-102N	RESISTOR	1kΩ,1／16W
R368	NRVA62D-152N	RESISTOR	1.5kΩ,1／16W
R369	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R370	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R371	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R372	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R373	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R374	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R375	QRD161J-750	RESISTOR	75Ω,1／6W
R376	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R377	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R378	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R379	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R380	NRVA62D-821N	RESISTOR	820Ω,1／16W
R381	NRVA62D-821N	RESISTOR	820Ω,1／16W
R382	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R383	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R384	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R385	QRSA08J-681YN	RESISTOR	680Ω,1／10W

#△REF No.	PART No.	PART NAME,	DESCRIPTION
R386	NRVA62D-102N	RESISTOR	1kΩ,1/16W
R387	NRVA62D-561N	RESISTOR	560Ω,1/16W
R388	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R389	QRV141F-2740AY	CMF RESISTOR	274Ω,1/4W
R390	QRV141F-8200AY	CMF RESISTOR	820Ω,1/4W
R391	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R392	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R393	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R394	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R395	NRVA62D-102N	RESISTOR	1kΩ,1/16W
R396	NRVA62D-152N	RESISTOR	1.5kΩ,1/16W
R397	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R398	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R399	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R400	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R401	QRSA08J-821YN	RESISTOR	820Ω,1/10W
R402	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R403	QRD161J-750	RESISTOR	75Ω,1/6W
R404	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R405	QRSA08J-122YN	RESISTOR	1.2kΩ,1/10W
R408	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R409	QRSA08J-333YN	RESISTOR	33kΩ,1/10W
R410	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R411	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R412	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R413	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R414	QRSA08J-181YN	RESISTOR	180Ω,1/10W
R415	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R416	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R417	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R418	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R419	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R420	QRSA08J-182YN	RESISTOR	1.8kΩ,1/10W
R421	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R422	QRSA08J-681YN	RESISTOR	680Ω,1/10W
R423	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R424	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R425	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R426	QRSA08J-223YN	RESISTOR	22kΩ,1/10W
R427	QRSA08J-332YN	RESISTOR	3.3kΩ,1/10W
R428	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R429	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R430	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
R432	QRSA08J-102YN	RESISTOR	1kΩ,1/10W
R433	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
R434	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
R435	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
C101	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C103	QCSA1HJ-121	CAPACITOR	120pF,50V
C104	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C105	QETC1AM-107	E CAPACITOR	100μF,10V
C106	QETC1AM-107	E CAPACITOR	100μF,10V
C107	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C108	QETC1AM-107	E CAPACITOR	100μF,10V
C109	QCSA1HJ-101	CAPACITOR	100pF,50V
C110	QETC1AM-107	E CAPACITOR	100μF,10V
C111	QCSA1HJ-470	CAPACITOR	47pF,50V
C112	QETC1AM-107	E CAPACITOR	100μF,10V
C113	QETC1AM-107	E CAPACITOR	100μF,10V
C114	QCSA1HJ-101	CAPACITOR	100pF,50V
C115	QCSA1HJ-470	CAPACITOR	47pF,50V
C116	QETC1AM-107	E CAPACITOR	100μF,10V
C117	QETC1AM-107	E CAPACITOR	100μF,10V
C118	QETC1CM-107	E CAPACITOR	100μF,16V
C119	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C120	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C121	QETC1HM-105	E CAPACITOR	1μF,50V
C122	QFV71HJ-474	TF CAPACITOR	0.47μF,50V
C123	QETC1AM-107	E CAPACITOR	100μF,10V
C124	QCFA1EZ-473	CAPACITOR	0.047μF,25V
C125	QCFA1EZ-473	CAPACITOR	0.047μF,25V
C126	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C127	QETC1HM-105	E CAPACITOR	1μF,50V
C128	QCFA1HZ-102	CAPACITOR	0.001μF,50V
C129	QCFA1HZ-102	CAPACITOR	0.001μF,50V
C130	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C131	QETC1AM-476	E CAPACITOR	47μF,10V
C132	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C133	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C134	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C135	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C136	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C137	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C138	QCSA1HJ-560	CAPACITOR	56pF,50V
C139	QCSA1HJ-121	CAPACITOR	120pF,50V
C140	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C141	NFV21CJ-102AY	TF CAPACITOR	0.001μF,16V
C142	NFV21CJ-102AY	TF CAPACITOR	0.001μF,16V
C143	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C144	QENC1HM-225	NP E CAPACITOR	2.2μF,50V
C145	QETC1AM-107	E CAPACITOR	100μF,10V
C146	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C147	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C148	QETC1AM-107	E CAPACITOR	100μF,10V
C149	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C150	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C151	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C152	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C153	QETC1AM-476	E CAPACITOR	47μF,10V
C154	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C155	QETC1AM-476	E CAPACITOR	47μF,10V
C156	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C157	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C158	QETC1AM-107	E CAPACITOR	100μF,10V
C159	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C160	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C161	QFN41HJ-102	M CAPACITOR	0.001μF,50V
C162	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C163	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C164	QFN41HJ-102	M CAPACITOR	0.001μF,50V
C165	QFN41HJ-392	M CAPACITOR	0.0039μF,50V
C166	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C167	QCSA1HJ-101	CAPACITOR	100pF,50V

#⚠REF No.	PART No.	PART NAME, DESCRIPTION	
C168	QFN41HJ-122	M CAPACITOR	0.0012μF,50V
C169	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C170	QCSA1HJ-560	CAPACITOR	56pF,50V
C171	QCSA1HJ-331	CAPACITOR	330pF,50V
C172	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C173	QFN41HJ-102	M CAPACITOR	0.001μF,50V
C174	QETC1AM-107	E CAPACITOR	100μF,10V
C175	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C176	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C177	QCFA1CZ-334	CAPACITOR	0.33μF,16V
C178	QETC1CM-107	E CAPACITOR	100μF,16V
C179	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C180	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C181	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C182	QCFA1HZ-102	CAPACITOR	0.001μF,50V
C183	QETC1CM-107	E CAPACITOR	100μF,16V
C184	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C185	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C187	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C188	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C189	QCSA1HJ-821	CAPACITOR	820pF,50V
C190	QCSA1HJ-471	CAPACITOR	470pF,50V
C191	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C193	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C195	NFV21CJ-102AY	TF CAPACITOR	0.001μF,16V
C196	QCFA1HZ-102	CAPACITOR	0.001μF,50V
C197	NFV21CJ-682AY	TF CAPACITOR	0.0068μF,16V
C198	NFV21CJ-682AY	TF CAPACITOR	0.0068μF,16V
C199	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C200	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C201	QCFA1HZ-102	CAPACITOR	0.001μF,50V
C301	QETC1AM-107	E CAPACITOR	100μF,10V
C302	QETC1CM-476	E CAPACITOR	47μF,16V
C303	QETC1AM-107	E CAPACITOR	100μF,10V
C304	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C305	QETC1AM-107	E CAPACITOR	100μF,10V
C306	QCSA1HJ-3R0	CAPACITOR	3pF,50V
C307	QETC1AM-107	E CAPACITOR	100μF,10V
C308	QETC1AM-107	E CAPACITOR	100μF,10V
C309	QETC1AM-107	E CAPACITOR	100μF,10V
C310	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C311	QETC1AM-107	E CAPACITOR	100μF,10V
C312	QETC1AM-107	E CAPACITOR	100μF,10V
C313	QETC1AM-107	E CAPACITOR	100μF,10V
C314	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C315	QETC1AM-107	E CAPACITOR	100μF,10V
C316	QETC1AM-107	E CAPACITOR	100μF,10V
C317	QETC1AM-107	E CAPACITOR	100μF,10V
C318	QETC1CM-336	E CAPACITOR	33μF,16V
C319	QETC1CM-107	E CAPACITOR	100μF,16V
C320	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C321	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C322	QETC1AM-107	E CAPACITOR	100μF,10V
C323	QETC1AM-107	E CAPACITOR	100μF,10V
C324	QCSA1HJ-101	CAPACITOR	100pF,50V
C325	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C326	QETC1AM-107	E CAPACITOR	100μF,10V
C327	QCSA1HJ-470	CAPACITOR	47pF,50V
C328	QETC1AM-107	E CAPACITOR	100μF,10V
C329	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C330	QETC1AM-107	E CAPACITOR	100μF,10V
C331	QETC1AM-107	E CAPACITOR	100μF,10V
C332	QETC1AM-107	E CAPACITOR	100μF,10V
C333	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C334	QETC1AM-107	E CAPACITOR	100μF,10V
C335	QETC1AM-107	E CAPACITOR	100μF,10V
C336	QCSA1HJ-470	CAPACITOR	47pF,50V
C337	QETC1AM-107	E CAPACITOR	100μF,10V
C338	QETC1AM-107	E CAPACITOR	100μF,10V
C339	QETC1CM-336	E CAPACITOR	33μF,16V
C340	QETC1CM-107	E CAPACITOR	100μF,16V
C341	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C342	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C343	QETC1AM-107	E CAPACITOR	100μF,10V
C344	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C345	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C346	QETC1AM-107	E CAPACITOR	100μF,10V
C347	QETC1AM-107	E CAPACITOR	100μF,10V
C348	QCSA1HJ-101	CAPACITOR	100pF,50V
C349	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C350	QETC1AM-107	E CAPACITOR	100μF,10V
C351	QCSA1HJ-470	CAPACITOR	47pF,50V
C352	QETC1AM-107	E CAPACITOR	100μF,10V
C353	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C354	QETC1AM-107	E CAPACITOR	100μF,10V
C355	QETC1AM-107	E CAPACITOR	100μF,10V
C356	QETC1AM-107	E CAPACITOR	100μF,10V
C357	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C358	QETC1AM-107	E CAPACITOR	100μF,10V
C359	QETC1AM-107	E CAPACITOR	100μF,10V
C360	QCSA1HJ-470	CAPACITOR	47pF,50V
C361	QETC1AM-107	E CAPACITOR	100μF,10V
C362	QETC1AM-107	E CAPACITOR	100μF,10V
C363	QETC1CM-336	E CAPACITOR	33μF,16V
C364	QETC1CM-107	E CAPACITOR	100μF,16V
C365	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C366	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C367	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C368	QCSA1HJ-560	CAPACITOR	56pF,50V
C369	QCSA1HJ-121	CAPACITOR	120pF,50V
C370	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C371	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C372	QCSA1HJ-470	CAPACITOR	47pF,50V
C373	QCSA1HJ-470	CAPACITOR	47pF,50V
C374	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C375	QETC1CM-476	E CAPACITOR	47μF,16V
C376	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C377	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C378	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C379	QCFA1EZ-104	CAPACITOR	0.1μF,25V
C380	QETC1CM-476	E CAPACITOR	47μF,16V
C381	QCFA1HZ-103	CAPACITOR	0.01μF,50V
C382	QENC1AM-476	NP E CAPACITOR	47μF,10V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C383	QCFA1EZ-104	CAPACITOR	0.1 µ F,25V
	C384	QETC1CM-476	E CAPACITOR	47 µ F,16V
	C385	QCFA1HZ-103	CAPACITOR	0.01 µ F,50V
	C386	QCFA1EZ-104	CAPACITOR	0.1 µ F,25V
	C387	QETC1CM-107	E CAPACITOR	100 µ F,16V
	C388	QCFA1HZ-103	CAPACITOR	0.01 µ F,50V
	C389	QCFA1HZ-103	CAPACITOR	0.01 µ F,50V
	L101	YU41134-121J	COIL	120 µ H
	L102	YU41134-221JY	COIL	220 µ H
	L301	YU41134-121J	COIL	120 µ H
	L302	YU41134-4R7KY	COIL	4.7 µ H
	L303	YU41134-4R7KY	COIL	4.7 µ H
	LPF101	PGZ01526	LOW PASS FILTER	
	LPF102	PGZ01526	LOW PASS FILTER	
	LPF301	PGZ01431	LOW PASS FILTER	
	LPF302	PGZ00131-002	DELAY LINE	
	LPF303	PGZ00826-003	DELAY LINE	
	LPF304	PGZ00826-003	DELAY LINE	
⚠	X101	PGZ01555	VCO	
	RV1	PU53276	PLASTIC RIVET, ×4	
	SLD1	PRD30781-02-03	SHIELD PLATE	
	GND1	PGZ00587-00	TEST POINT	
	TP1	PGZ01015	TEST PIN	
	TP23	PGZ01015	TEST PIN	
	CN1	PGZ00421-64	MALE CONNECTOR	

TBC-3 BOARD ASSEMBLY<62>

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	PWBA	PRK10070B-01	TBC-3 BOARD ASSY
	IC1	UPC78L12T	IC
	IC2	UPC78L05T	IC
	IC3	UPC78L05T	IC
	IC4	UPC78L05T	IC
	IC5	UPC78L05T	IC
	IC6	UPC79N12H	IC
	IC8	UPC78L05T	IC
	IC10	UPC78L05T	IC
	IC11	UPC78L05T	IC
	IC12	UPC78L05T	IC
	IC13	UPC79N05H	IC
	IC14	UPC78L05T	IC
	IC15	UPC78L12T	IC
	IC16	UPC78L05T	IC
	IC19	UPC78L05T	IC
	IC20	UPC78L05T	IC
	IC101	TC74HC4538AF	IC
	IC102	TC74HC08AF	IC
	IC103	CXA1228S	IC
	IC104	UPC311G2	IC
	IC105	SN75158PS	IC
	IC106	TC7W04F	IC
	IC107	TC74HC74AF	IC
	IC108	LA7213	IC
	IC109	TC74HC74AF	IC
	IC301	UPC4082G2	IC
	IC302	TC4053BF	IC
	IC303	UPC4082G2	IC
	IC304	UPC319G2	IC
	IC305	TC74HC541AF	IC
	IC306	LA7213	IC
	IC307	TC74HC14AF	IC
	IC308	SN74LS221NS	IC
	IC309	SN74LS221NS	IC
	IC310	TC74HC4538AF	IC
	IC311	TC7S08F	IC
	IC313	TC74HC221AF	IC
	IC315	M51957BL	IC
	IC317	JCL0003	IC
	IC318	SN74LS221NS	IC
	IC319	TC74HC221AF	IC
	IC321	TC7S04F	IC
	IC322	MN50005JVES	IC
	IC502	TC74HC221AF	IC
	IC503	TC4W53F	IC
	IC504	TC74HC221AF	IC
	IC505	SN7406NS	IC
	IC506	RC4560M	IC
	IC507	UPC319G2	IC
	IC508	TC7W04F	IC
	IC509	SN75158PS	IC
	IC510	TC7S32F	IC
	IC511	JCL0005	IC
	IC512	TC7S32F	IC
	IC522	TC4069UBF	IC
	IC523	TC4W66F	IC
	IC524	UPC4074G2	IC
	IC525	TC7W04F	IC
	Q101	2SA1037K(QR)	TRANSISTOR
	Q102	2SA1037K(QR)	TRANSISTOR
	Q103	2SC2412K(QR)	TRANSISTOR
	Q105	2SC2412K(QR)	TRANSISTOR

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
Q113	2SC2412K(QR)	TRANSISTOR	
Q114	2SC2412K(QR)	TRANSISTOR	
Q115	2SK621	FE TRANSISTOR	
Q116	2SK621	FE TRANSISTOR	
Q117	2SK621	FE TRANSISTOR	
Q118	2SA1036K(R)	TRANSISTOR	
Q119	2SC2412K(QR)	TRANSISTOR	
Q120	FMG2	TRANSISTOR	
Q121	2SK656	FE TRANSISTOR	
Q301	2SA1037K(QR)	TRANSISTOR	
Q302	2SA1037K(QR)	TRANSISTOR	
Q303	2SC2412K(QR)	TRANSISTOR	
Q304	2SA1037K(QR)	TRANSISTOR	
Q305	2SA1037K(QR)	TRANSISTOR	
Q306	2SC2412K(QR)	TRANSISTOR	
Q312	2SA1037K(QR)	TRANSISTOR	
Q313	2SC2412K(QR)	TRANSISTOR	
Q501	2SA1037K(QR)	TRANSISTOR	
Q502	2SA1037K(QR)	TRANSISTOR	
Q508	2SA1037K(QR)	TRANSISTOR	
Q509	2SC2412K(QR)	TRANSISTOR	
Q510	2SA1037K(QR)	TRANSISTOR	
Q511	2SC2412K(QR)	TRANSISTOR	
Q512	2SC2412K(QR)	TRANSISTOR	
Q513	2SC2412K(QR)	TRANSISTOR	
Q514	2SK621	FE TRANSISTOR	
D101	DAN202K	DIODE	
D102	DAP202K	DIODE	
D103	DAN202K	DIODE	
D301	DAP202K	DIODE	
D302	DAN202K	DIODE	
D303	DAN202K	DIODE	
D305	1SS133	DIODE	
D306	1SS133	DIODE	
D502	DAP202K	DIODE	
D503	1SV68-40	DIODE	
D504	1SV68-40	DIODE	
R1	NVP1415-501N	V RESISTOR	500Ω,1／4W
R2	NVP1415-103N	V RESISTOR	10kΩ,1／4W
R4	NVP1415-103N	V RESISTOR	10kΩ,1／4W
R5	NVP1415-102N	V RESISTOR	1kΩ,1／4W
R7	NVP1415-503N	V RESISTOR	50kΩ,1／4W
R8	NVP1415-103N	V RESISTOR	10kΩ,1／4W
R12	QVPB610-103	V RESISTOR	10kΩ
R101	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R102	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R103	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R104	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R105	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R106	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R107	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R108	QRSA08J-473YN	RESISTOR	47kΩ,1／10W
R109	QRSA08J-183YN	RESISTOR	18kΩ,1／10W
R110	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R111	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R112	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R113	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R114	QRSA08J-471YN	RESISTOR	470Ω,1／10W
R115	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R116	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R117	QRSA08J-331YN	RESISTOR	330Ω,1／10W
R118	QRSA08J-224YN	RESISTOR	220kΩ,1／10W
R119	QRSA08J-821YN	RESISTOR	820Ω,1／10W
R120	QRSA08J-471YN	RESISTOR	470Ω,1／10W
R121	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R130	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R131	QRSA08J-394YN	RESISTOR	390kΩ,1／10W
R132	QRSA08J-182YN	RESISTOR	1.8kΩ,1／10W
R133	QRSA08J-392YN	RESISTOR	3.9kΩ,1／10W
R134	QRSA08J-184YN	RESISTOR	180kΩ,1／10W
R135	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R136	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R137	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R138	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R139	QRSA08J-104YN	RESISTOR	100kΩ,1／10W
R140	QRSA08J-183YN	RESISTOR	18kΩ,1／10W
R141	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R142	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R143	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R144	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R145	QRSA08J-105YN	RESISTOR	1MΩ,1／10W
R146	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R147	QRSA08J-333YN	RESISTOR	33kΩ,1／10W
R148	QRSA08J-181YN	RESISTOR	180Ω,1／10W
R149	QRSA08J-122YN	RESISTOR	1.2kΩ,1／10W
R150	QRSA08J-561YN	RESISTOR	560Ω,1／10W
R151	QRSA08J-561YN	RESISTOR	560Ω,1／10W
R152	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R153	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R154	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R155	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R156	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R157	QRSA08J-681YN	RESISTOR	680Ω,1／10W
R158	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R159	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R160	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R161	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R162	QRSA08J-391YN	RESISTOR	390Ω,1／10W
R163	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R164	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R166	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R167	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R168	QRSA08J-221YN	RESISTOR	220Ω,1／10W
R169	QRD161J-103	RESISTOR	10kΩ,1／6W
R170	QRD161J-103	RESISTOR	10kΩ,1／6W

#⚠REF No.	PART No.	PART NAME,	DESCRIPTION
R301	QRSA08J-181YN	RESISTOR	180Ω ,1/10W
R302	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R303	QRSA08J-392YN	RESISTOR	3.9kΩ ,1/10W
R304	QRSA08J-272YN	RESISTOR	2.7kΩ ,1/10W
R305	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R306	QRSA08J-181YN	RESISTOR	180Ω ,1/10W
R307	QRSA08J-332YN	RESISTOR	3.3kΩ ,1/10W
R308	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R309	QRSA08J-183YN	RESISTOR	18kΩ ,1/10W
R310	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R311	QRSA08J-122YN	RESISTOR	1.2kΩ ,1/10W
R312	QRSA08J-122YN	RESISTOR	1.2kΩ ,1/10W
R313	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R314	QRSA08J-681YN	RESISTOR	680Ω ,1/10W
R315	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R316	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R317	QRSA08J-181YN	RESISTOR	180Ω ,1/10W
R318	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R319	QRSA08J-471YN	RESISTOR	470Ω ,1/10W
R320	QRSA08J-471YN	RESISTOR	470Ω ,1/10W
R322	QRSA08J-331YN	RESISTOR	330Ω ,1/10W
R323	QRSA08J-471YN	RESISTOR	470Ω ,1/10W
R324	QRSA08J-681YN	RESISTOR	680Ω ,1/10W
R325	QRSA08J-681YN	RESISTOR	680Ω ,1/10W
R326	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R327	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R328	QRSA08J-822YN	RESISTOR	8.2kΩ ,1/10W
R329	QRSA08J-123YN	RESISTOR	12kΩ ,1/10W
R330	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R331	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R334	QRSA08J-333YN	RESISTOR	33kΩ ,1/10W
R335	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R336	QRSA08J-102YN	RESISTOR	1kΩ ,1/10W
R337	QRSA08J-181YN	RESISTOR	180Ω ,1/10W
R338	QRSA08J-102YN	RESISTOR	1kΩ ,1/10W
R339	QRSA08J-471YN	RESISTOR	470Ω ,1/10W
R340	QRSA08J-102YN	RESISTOR	1kΩ ,1/10W
R341	QRSA08J-333YN	RESISTOR	33kΩ ,1/10W
R342	QRSA08J-561YN	RESISTOR	560Ω ,1/10W
R343	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R344	NRVA62D-203N	CMF RESISTOR	20kΩ ,1/16W
R345	QRSA08J-472YN	RESISTOR	4.7kΩ ,1/10W
R346	QRSA08J-472YN	RESISTOR	4.7kΩ ,1/10W
R347	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R348	NRVA62D-473N	RESISTOR	47kΩ ,1/16W
R349	NRVA62D-123N	RESISTOR	12kΩ ,1/16W
R350	QRSA08J-474YN	RESISTOR	470kΩ ,1/10W
R351	QRSA08J-472YN	RESISTOR	4.7kΩ ,1/10W
R352	QRSA08J-223YN	RESISTOR	22kΩ ,1/10W
R353	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R354	QRSA08J-562YN	RESISTOR	5.6kΩ ,1/10W
R362	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R363	QRSA08J-562YN	RESISTOR	5.6kΩ ,1/10W
R364	QRSA08J-272YN	RESISTOR	2.7kΩ ,1/10W
R365	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R366	QRSA08J-0R0Y	RESISTOR	0Ω ,1/10W
R367	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R368	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R369	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R370	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R383	NRVA62D-223N	RESISTOR	22kΩ ,1/16W
R384	NRVA62D-563N	RESISTOR	56kΩ ,1/16W
R385	NRVA62D-273N	RESISTOR	27kΩ ,1/16W
R386	QRSA08J-682YN	RESISTOR	6.8kΩ ,1/10W
R387	QRSA08J-682YN	RESISTOR	6.8kΩ ,1/10W
R388	QRSA08J-153YN	RESISTOR	15kΩ ,1/10W
R389	QRSA08J-153YN	RESISTOR	15kΩ ,1/10W
R390	QRSA08J-393YN	RESISTOR	39kΩ ,1/10W
R391	QRSA08J-102YN	RESISTOR	1kΩ ,1/10W
R392	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R393	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R394	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R395	QRSA08J-331YN	RESISTOR	330Ω ,1/10W
R396	QRSA08J-224YN	RESISTOR	220kΩ ,1/10W
R419	QRSA08J-561YN	RESISTOR	560Ω ,1/10W
R501	QRSA08J-0R0Y	RESISTOR	0Ω ,1/10W
R503	QRSA08J-563YN	RESISTOR	56kΩ ,1/10W
R504	QRSA08J-273YN	RESISTOR	27kΩ ,1/10W
R506	QRSA08J-332YN	RESISTOR	3.3kΩ ,1/10W
R508	QRSA08J-563YN	RESISTOR	56kΩ ,1/10W
R510	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R511	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R512	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R513	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R514	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R515	QRSA08J-680YN	RESISTOR	68Ω ,1/10W
R516	QRSA08J-560YN	RESISTOR	56Ω ,1/10W
R517	QRSA08J-333YN	RESISTOR	33kΩ ,1/10W
R518	QRSA08J-102YN	RESISTOR	1kΩ ,1/10W
R519	QRSA08J-182YN	RESISTOR	1.8kΩ ,1/10W
R520	QRSA08J-182YN	RESISTOR	1.8kΩ ,1/10W
R521	QRSA08J-473YN	RESISTOR	47kΩ ,1/10W
R522	QRSA08J-222YN	RESISTOR	2.2kΩ ,1/10W
R523	QRSA08J-333YN	RESISTOR	33kΩ ,1/10W
R524	QRSA08J-103YN	RESISTOR	10kΩ ,1/10W
R525	QRSA08J-680YN	RESISTOR	68Ω ,1/10W
R526	QRSA08J-560YN	RESISTOR	56Ω ,1/10W
R527	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R528	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R529	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R530	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R531	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R532	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R533	QRSA08J-221YN	RESISTOR	220Ω ,1/10W
R534	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R539	QRSA08J-472YN	RESISTOR	4.7kΩ ,1/10W
R540	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R541	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R571	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R572	QRSA08J-101YN	RESISTOR	100Ω ,1/10W
R573	QRSA08J-224YN	RESISTOR	220kΩ ,1/10W

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION
	R574	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
	R576	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R577	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
	R578	QRSA08J-224YN	RESISTOR	220kΩ,1/10W
	R579	QRSA08J-154YN	RESISTOR	150kΩ,1/10W
	R580	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R581	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R582	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
	R583	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
	R584	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
	R585	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
	R586	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R587	QRSA08J-472YN	RESISTOR	4.7kΩ,1/10W
	R588	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R590	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
	R591	QRSA08J-125YN	RESISTOR	1.2MΩ,1/10W
	R592	QRSA08J-563YN	RESISTOR	56kΩ,1/10W
	R593	QRSA08J-222YN	RESISTOR	2.2kΩ,1/10W
	R595	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R596	QRSA08J-103YN	RESISTOR	10kΩ,1/10W
	R597	QRSA08J-104YN	RESISTOR	100kΩ,1/10W
	R598	QRSA08J-181YN	RESISTOR	180Ω,1/10W
	R599	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
	R600	QRSA08J-181YN	RESISTOR	180Ω,1/10W
	R601	QRSA08J-152YN	RESISTOR	1.5kΩ,1/10W
	R602	QRSA08J-221YN	RESISTOR	220Ω,1/10W
	R603	QRSA08J-105YN	RESISTOR	1MΩ,1/10W
	R605	QRSA08J-473YN	RESISTOR	47kΩ,1/10W
	R607	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R608	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	R609	QRSA08J-101YN	RESISTOR	100Ω,1/10W
	C101	QENC1AM-226	E CAPACITOR	22μF,10V
	C102	QEK61AM-476	E CAPACITOR	47μF,10V
	C103	QEK61AM-476	E CAPACITOR	47μF,10V
	C105	QCSA1HJ-391	CAPACITOR	390pF,50V
	C106	QEK61CM-107	E CAPACITOR	100μF,16V
	C107	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C108	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C109	QENC1EM-335	NP E CAPACITOR	3.3μF,25V
	C110	QEF81AM-106	TANTAL CAPACITOR	10μF,10V
	C111	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C112	QCYA1HK-273	CAPACITOR	0.027μF,50V
	C113	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C114	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C115	QETC1AM-107	E CAPACITOR	100μF,10V
	C116	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C117	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C118	NFV31CJ-473AY	TF CAPACITOR	0.047μF,16V
	C119	QENC1AM-476	NP E CAPACITOR	47μF,10V
	C120	QCF81CZ-474	CAPACITOR	0.47μF,16V
	C121	NFV31CJ-473AY	TF CAPACITOR	0.047μF,16V
	C122	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C123	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C124	QENC1HM-105	NP E CAPACITOR	1μF,50V
	C125	QEF81AM-475	TANTAL CAPACITOR	4.7μF,10V
	C126	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C127	QCSA1HJ-220	CAPACITOR	22pF,50V
	C128	QCSA1HJ-220	CAPACITOR	22pF,50V
	C129	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C130	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C131	QCSA1HJ-151	CAPACITOR	150pF,50V
	C132	QCSA1HJ-150	CAPACITOR	15pF,50V
	C133	QCSA1HJ-151	CAPACITOR	150pF,50V
	C134	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C135	QEK61AM-107	E CAPACITOR	100μF,10V
	C136	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C137	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C138	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C139	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C140	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C141	QEK61AM-107	E CAPACITOR	100μF,10V
	C142	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C143	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C144	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C145	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C146	QEK61AM-107	E CAPACITOR	100μF,10V
	C147	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C148	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C149	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C150	QETC1EM-107	E CAPACITOR	100μF,25V
	C151	QETC1AM-107	E CAPACITOR	100μF,10V
	C152	QETC1EM-107	E CAPACITOR	100μF,25V
	C153	QCFA1EZ-104	CAPACITOR	0.1μF,25V
⚠	C154	QCSA1HJ-221	CAPACITOR	220pF,50V
	C301	QETC1CM-226	E CAPACITOR	22μF,16V
	C302	QETC1AM-226	E CAPACITOR	22μF,10V
	C303	QETC1AM-476	E CAPACITOR	47μF,10V
	C304	QCSA1HJ-121	CAPACITOR	120pF,50V
	C305	QCSA1HJ-271	CAPACITOR	270pF,50V
	C307	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C308	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C309	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C310	QEF81CM-105	TANTAL CAPACITOR	1μF,16V
	C311	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C312	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C313	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C314	QCSA1HJ-681	CAPACITOR	680pF,50V
	C315	QCYA1HK-122	CAPACITOR	0.0012μF,50V
	C316	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C317	QETC1AM-107	E CAPACITOR	100μF,10V
	C318	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C319	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C320	QETC1CM-107	E CAPACITOR	100μF,16V
	C321	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C322	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C323	QETC1AM-107	E CAPACITOR	100μF,10V
	C324	QCSA1HJ-391	CAPACITOR	390pF,50V
	C325	QENC1EM-335	NP E CAPACITOR	3.3μF,25V
	C326	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C331	QEF81AM-106	TANTAL CAPACITOR	10μF,10V
	C334	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C335	QCSA1HJ-221	CAPACITOR	220pF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C336	NFV31CJ-122AY	TF CAPACITOR	0.0012μF,16V
	C337	QCTA1CH-121	CAPACITOR	120pF,16V
	C338	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C339	QCSA1HJ-221	CAPACITOR	220pF,50V
	C340	QCTA1CH-221	CAPACITOR	220pF,16V
	C341	QCTA1CH-221	CAPACITOR	220pF,16V
	C342	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C343	QCTA1CH-121	CAPACITOR	120pF,16V
	C344	QCYA1HJ-103	CAPACITOR	0.01μF,50V
	C345	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C346	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C348	QCSA1HJ-221	CAPACITOR	220pF,50V
	C349	QCTA1CH-820	CAPACITOR	82pF,16V
	C350	QCTA1CH-820	CAPACITOR	82pF,16V
	C351	QETC1AM-107	E CAPACITOR	100μF,10V
	C352	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C353	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C363	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C364	QCSA1HJ-100	CAPACITOR	10pF,50V
	C370	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C374	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C375	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C376	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C377	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C378	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C379	QEK61AM-107	E CAPACITOR	100μF,10V
	C380	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C381	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C382	QFN41HJ-682	M CAPACITOR	0.0068μF,50V
	C390	QCTA1CH-121	CAPACITOR	120pF,16V
	C391	NFV31CJ-122AY	TF CAPACITOR	0.0012μF,16V
	C392	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C393	QCTA1CH-221	CAPACITOR	220pF,16V
	C394	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C395	QEK61AM-107	E CAPACITOR	100μF,10V
	C396	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C397	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C401	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C402	QCSA1HJ-330	CAPACITOR	33pF,50V
	C403	QCSA1HJ-330	CAPACITOR	33pF,50V
	C404	QCYA1HK-152	CAPACITOR	0.0015μF,50V
	C405	QCSA1HJ-561	CAPACITOR	560pF,50V
	C406	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C407	NFV31CJ-102AY	TF CAPACITOR	0.001μF,16V
	C408	QEK61AM-107	E CAPACITOR	100μF,10V
	C409	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C410	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C411	QETC1AM-107	E CAPACITOR	100μF,10V
	C412	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C413	QCFA1HZ-104	CAPACITOR	0.1μF,50V
	C414	NFV31CJ-103AY	TF CAPACITOR	0.01μF,16V
	C415	NFV31CJ-223AY	TF CAPACITOR	0.022μF,16V
⚠	C416	QCSA1HJ-101	CAPACITOR	100pF,50V
⚠	C417	QCSA1HJ-101	CAPACITOR	100pF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C502	QCTA1CH-121	CAPACITOR	120pF,16V
	C503	QCTA1CH-820	CAPACITOR	82pF,16V
	C504	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C505	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C506	QCTA1CH-121	CAPACITOR	120pF,16V
	C507	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C508	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C509	QETC1AM-107	E CAPACITOR	100μF,10V
	C510	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C511	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C512	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C513	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C514	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C515	QCSA1HJ-3R0	CAPACITOR	3pF,50V
	C516	QCTA1CH-101	CAPACITOR	100pF,16V
	C517	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C518	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C519	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C520	QCTA1CH-101	CAPACITOR	100pF,16V
	C521	QCSA1HJ-3R0	CAPACITOR	3pF,50V
	C522	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C523	QETC1CM-107	E CAPACITOR	100μF,16V
	C524	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C525	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C526	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C527	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C528	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C529	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C530	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C531	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C532	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C533	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C534	QEK61AM-107	E CAPACITOR	100μF,10V
	C535	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C536	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C571	QENC1CM-106	NP E CAPACITOR	10μF,16V
	C573	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C574	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C575	QCSA1HJ-470	CAPACITOR	47pF,50V
	C576	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C577	NFV21CJ-102AY	TF CAPACITOR	0.001μF,16V
	C578	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C579	NFV21CJ-103AY	TF CAPACITOR	0.01μF,16V
	C580	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C581	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C582	QCTA1CH-150	CAPACITOR	15pF,16V
	C583	NFV31CJ-123AY	TF CAPACITOR	0.012μF,16V
	C584	QEK61AM-107	E CAPACITOR	100μF,10V
	C585	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C586	QCFA1EZ-104	CAPACITOR	0.1μF,25V
	C588	QCYA1HK-472	CAPACITOR	0.0047μF,50V
	C589	QCFA1HZ-103	CAPACITOR	0.01μF,50V
	C590	QCTA1CH-470	CAPACITOR	47pF,16V
	C591	QCTA1CH-820	CAPACITOR	82pF,16V
	C592	QCTA1CH-820	CAPACITOR	82pF,16V
	C593	QCSA1HJ-470	CAPACITOR	47pF,50V
	C594	QCFA1HZ-103	CAPACITOR	0.01μF,50V

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C597	QEK61AM-107	E CAPACITOR	100 μ F,10V
	C598	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C599	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C600	QETC1AM-107	E CAPACITOR	100 μ F,10V
	C601	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
	C602	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C603	QCFA1HZ-103	CAPACITOR	0.01 μ F,50V
⚠	C604	QCSA1HJ-101	CAPACITOR	100pF,50V
⚠	C605	QCSA1HJ-101	CAPACITOR	100pF,50V
⚠	C606	QCSA1HJ-101	CAPACITOR	100pF,50V
⚠	C607	QCSA1HJ-101	CAPACITOR	100pF,50V
	L1	PGZ01563-3R3	COIL	
	L101	YU41134-470JY	COIL	47 μ H
	L102	YU41134-8R2KY	COIL	8.2 μ H
	L103	YU41134-820J	COIL	82 μ H
	L104	YU41134-8R2KY	COIL	8.2 μ H
	L301	YU41134-151JY	COIL	150 μ H
	L302	YU41134-470JY	COIL	47 μ H
⚠	X1	PGZ01577	CRYSTAL RESONATOR	
⚠	X2	PGZ01691	CXO	
⚠	X3	PU55407	RESONATOR	
	SW1	QSS1K41-L01	DIP SW	
⚠	K101	PGZ01693-009Z	FERRATE BEADS	
⚠	K105	PGZ01693-009Z	FERRATE BEADS	
⚠	K106	PGZ01693-005Z	FERRATE BEADS	
⚠	K109	PGZ01693-009Z	FERRATE BEADS	
⚠	K303	PGZ01693-009Z	FERRATE BEADS	
⚠	K304	PGZ01693-009Z	FERRATE BEADS	
⚠	K502	PGZ01693-009Z	FERRATE BEADS	
⚠	K511	PGZ01693-009Z	FERRATE BEADS	
⚠	K512	PGZ01693-009Z	FERRATE BEADS	
⚠	K513	PGZ01693-009Z	FERRATE BEADS	
	RV1	PU53276	PLASTIC RIVET, × 4	
	SLD1	PRD30781-02-03	SHIELD PLATE	
	GND1	PGZ00587-00	TEST POINT	
	GND2	PGZ00587-00	TEST POINT	
	GND3	PGZ00587-00	TEST POINT	
	GND4	PGZ00587-00	TEST POINT	
	GND5	PGZ00587-00	TEST POINT	
	GND6	PGZ00587-00	TEST POINT	
	GND7	PGZ00587-00	TEST POINT	
	GND8	PGZ00587-00	TEST POINT	

#⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	TP1	PGZ01015	TEST PIN, × 22
	CN1	PGZ00421-64	MALE CONNECTOR
⚠	CP1	ICP-F10	CIRCUIT PROTECTOR
⚠	CP2	ICP-F10	CIRCUIT PROTECTOR

REAR 4 BOARD ASSEMBLY<74>

REF No.	PART No.	PART NAME, DESCRIPTION	
PWBA	PRK20135B	REAR 4 BOARD ASSY	
IC1	BA10324	IC	
	or BA10324A	IC	
IC2	BU4551BF	IC	
IC3	UPD4066BG	IC	
Q1	DTC144EK	TRANSISTOR	
Q2	DTC144EK	TRANSISTOR	
Q3	FMG2	TRANSISTOR	
Q4	DTC144EK	TRANSISTOR	
D1	RD16ES-T1B2	ZENER DIODE	
D2	RD16ES-T1B2	ZENER DIODE	
D3	RD16ES-T1B2	ZENER DIODE	
D4	RD16ES-T1B2	ZENER DIODE	
D5	RD16ES-T1B2	ZENER DIODE	
D6	RD9.1EW	ZENER DIODE	
D7	RD9.1EW	ZENER DIODE	
D8	RD9.1EW	ZENER DIODE	
D9	RD9.1EW	ZENER DIODE	
D10	DAP202K	DIODE	
D11	DAN202K	DIODE	
D12	DAN202K	DIODE	
R1	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R2	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R3	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R4	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R5	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R6	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R7	QRSA08J-272YN	RESISTOR	2.7kΩ,1／10W
R8	QRSA08J-102YN	RESISTOR	1kΩ,1／10W
R9	QRSA08J-222YN	RESISTOR	2.2kΩ,1／10W
R10	QRSA08J-472YN	RESISTOR	4.7kΩ,1／10W
R11	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R12	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R14	QRSA08J-153YN	RESISTOR	15kΩ,1／10W
R15	QRSA08J-103YN	RESISTOR	10kΩ,1／10W
R16	QRSA08J-223YN	RESISTOR	22kΩ,1／10W
R17	QRSA08J-153YN	RESISTOR	15kΩ,1／10W

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION
	R18	QRSA08J-103YN	RESISTOR	10kΩ ,1／10W
	R19	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
	R20	QRSA08J-223YN	RESISTOR	22kΩ ,1／10W
	C1	QER41HM-105	E CAPACITOR	1 μ F,50V
	C2	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C3	QER41HM-105	E CAPACITOR	1 μ F,50V
	C4	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C5	QER41HM-105	E CAPACITOR	1 μ F,50V
	C6	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C7	QER41HM-105	E CAPACITOR	1 μ F,50V
	C8	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C9	QCFA1EZ-104	CAPACITOR	0.1 μ F,25V
	C10	QER41CM-476	E CAPACITOR	47 μ F,16V
	C12	QCF11HP-472	CAPACITOR	0.0047 μ F,50V
⚠	K1	PGZ00354	FERRATE BEADS	
	CN1	PU58844-110	CONNECTOR	
	CN2	PU58844-102	CONNECTOR	
	CN3	PU58844-106	CONNECTOR	
	CN4	PU58844-108	CONNECTOR	
	CN5	PU58844-104	CONNECTOR	

#⚠	REF No.	PART No.	PART NAME,	DESCRIPTION